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           35                    40                    45
Asp Thr Val Lys Ala Leu Thr Arg Glu Gln Glu Lys Leu Leu Gly Gln
           50                    55                    60
Leu Lys Glu Val Gln Ala Asp Lys Glu Gln Ser Glu Ala Glu Leu Gln
65                    70                    75                    80
Val Ala Gln Gln Glu Asn His His Leu Asn Leu Asp Leu Lys Glu Ala
                      85                    90                    95
Lys Ser Trp Gln Glu Glu Gln Ser Ala Gln Ala Gln Arg Leu Lys Asp
                100                   105                   110
Lys Val Ala Gln Met Lys Asp Thr Leu Gly Gln Ala Gln Gln Arg Val
                115                   120                   125
Ala Glu Leu Glu Pro Leu Lys Glu Gln Leu Arg Gly Ala Gln Glu Leu
     130                   135                   140
Ala Ala Ser Ser Gln Gln Lys Ala Thr Leu Leu Gly Glu Glu Leu Ala
145                   150                   155                   160
Ser Ala Ala Ala Ala Arg Asp Arg Thr Ile Ala Glu Leu His Arg Ser
                165                   170                   175
Arg Leu Glu Val Ala Glu Val Asn Gly Arg Leu Ala Glu Leu Gly Leu
                180                   185                   190
His Leu Lys Glu Glu Lys Cys Gln Trp Ser Lys Glu Arg Ala Gly Leu
                195                   200                   205
Leu Gln Ser Val Glu Ala Glu Lys Asp Lys Ile Leu Lys Leu Ser Ala
     210                   215                   220
Glu Ile Leu Arg Leu Glu Lys Ala Val Gln Glu Glu Lys Thr Gln Asn
225                   230                   235                   240
Gln Val Phe Lys Thr Glu Leu Ala Arg Glu Lys Asp Ser Ser Leu Val
                245                   250                   255
Gln Leu Ser Glu Ser Lys Arg Glu Leu Thr Glu Leu Arg Ser Ala Leu
                260                   265                   270
Arg Val Leu Gln Lys Glu Lys Glu Gln Leu Gln Glu Glu Lys Gln Glu
                275                   280                   285
Leu Leu Glu Tyr Met Arg Lys Leu Glu Ala Arg Leu Glu Lys Val Ala
     290                   295                   300
Asp Glu Lys Trp Asn Glu Asp Ala Thr Thr Glu Asp Glu Glu Ala Ala
305                   310                   315                   320
Val Gly Leu Ser Cys Pro Ala Ala Leu Thr Asp Ser Glu Asp Glu Ser
                325                   330                   335
Pro Glu Asp Met Arg Leu Pro Pro Tyr Gly Leu Cys Glu Arg Gly Asp
                340                   345                   350
Pro Gly Ser Ser Pro Ala Gly Pro Arg Glu Ala Ser Pro Leu Val Val
                355                   360                   365
Ile Ser Gln Pro Ala Pro Ile Ser Pro His Leu Ser Gly Pro Ala Glu
     370                   375                   380
Asp Ser Ser Ser Asp Ser Glu Ala Glu Asp Glu Lys Ser Val Leu Met
385                   390                   395                   400
Ala Ala Val Gln Ser Gly Gly Glu Glu Ala Asn Leu Leu Leu Pro Glu
                405                   410                   415
Leu Gly Ser Ala Phe Tyr Asp Met Ala Ser Gly Phe Thr Val Gly Thr
                420                   425                   430
Leu Ser Glu Thr Ser Thr Gly Gly Pro Ala Thr Pro Thr Trp Lys Glu
     435                   440                   445
Cys Pro Ile Cys Lys Glu Arg Phe Pro Ala Glu Ser Asp Lys Asp Ala
     450                   455                   460
Leu Glu Asp His Met Asp Gly His Phe Phe Phe Ser Thr Gln Asp Pro
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465                    470                   475                    480
Phe Thr Phe Glu


<210> 3985
<211> 523
<212> DNA
<213> Homo sapiens

<400> 3985
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120
aaaagcggca cctcccactc tctctctctc ggtccttctt tctctgtgtg atgagcctgc
180
tccctctttg ccttctacta tgactggaag ctccctgagg cctcctcaga agcagatgct
240
gctatatttc ctgtacagcc tggaaccgtc aaggtggagg ttgccccagg cacctctgtc
300
ctctcctcct cagcctcctc cagctgcttt tgctgttgtt gttgttgttg ctgctgctgc
360
tgctgctgct gttggatgag gctgaggtcg gagcggctga gttccgctct ggcggccgcg
420
gggaccagcc gcgctttcag cagccccacg gccaggccga gaagcagggt gcaggggaca
480
cgccggcaga gcctcgccat ggcctagagc cagagggccg cgg
523


<210> 3986
<211> 110
<212> PRT
<213> Homo sapiens

<400> 3986
Ala Cys Ser Leu Phe Ala Phe Tyr Tyr Asp Trp Lys Leu Pro Glu Ala
  1               5                  10                  15
Ser Ser Glu Ala Asp Ala Ala Ile Phe Pro Val Gln Pro Gly Thr Val
             20                  25                  30
Lys Val Glu Val Ala Pro Gly Thr Ser Val Leu Ser Ser Ser Ala Ser
          35                  40                  45
Ser Ser Cys Phe Cys Cys Cys Cys Cys Cys Cys Cys Cys Cys Cys Cys
       50                  55                  60
Cys Cys Trp Met Arg Leu Arg Ser Glu Arg Leu Ser Ser Ala Leu Ala
65                  70                  75                  80
Ala Ala Gly Thr Ser Arg Ala Phe Ser Ser Pro Thr Ala Arg Pro Arg
                85                  90                  95
Ser Arg Val Gln Gly Thr Arg Arg Gln Ser Leu Ala Met Ala
             100                 105                 110


<210> 3987
<211> 5954
<212> DNA
<213> Homo sapiens
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120
cagaattagg ttgccaccac taaattcact ctactttta taaaaaaacc tttaaaagat
180
atcttaggaa attaaagggt ttttcttcc atttcttttt ttctttcttt cttttaaagt
240
ttttcccccc ctttaactga aatgtggaat aaacatattt gtaaatttta cttattttag
300
gatggcagta taacacatca gatttctagg cctaatcctc caaatttggg tccaggcttt
360
gtcaatgatt cacagcgtaa gcagtatgaa gagtggctcc aggagaccca acagctgctt
420
caaatgcagc agaagtatct tgaagaacaa attggtgctc acagaaaatc taagaaggcc
480
ctttcagcta aacaacgtac tgccaagaaa gctgggcgtg aatttccaga ggaagatgca
540
gaacaactca agcatgttac tgaacagcaa agcatggttc agaaacagct agaacagatt
600
cgtaaacaac agaaagaaca tgctgaattg attgaagatt atcggatcaa acagcagcag
660
caatgtgcaa tggccccacc taccatgatg cccagtgtcc agccccagcc accctaatt
720
ccaggtgcca ctccacccac catgagccaa cccacctttc ccatggtgcc acagcagctt
780
cagcaccagc agcacacaac agttatttct ggccatacta gccctgttag aatgcccagt
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ttacctggat ggcaacccaa cagtgctcct gcccacctgc ccctcaatcc tctagaatt
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cagcccccaa ttgcccagtt accaataaaa acttgtacac cagccccagg gacagtctca
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aatgcaaatc cacagagtgg accaccacct cgggtagaat ttgatgacaa caatcccttt
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agtgaaagtt ttcaagaacg ggaacgtaag gaacgtttac gagaacagca agagagacaa
1080
cggatccaac tcatgcagga ggtagataga caaagagctt tgcagcagag gatggaaatg
1140
gagcagcatg gtatggtggg ctctgagata agtagtagta ggacatctgt gtcccagatt
1200
cccttctaca gttccgactt accttgtgat tttatgcaac ctctaggacc ccttcagcag
1260
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1320
tcaattaatt caccctccac ccaaactttc atgcagacta atgagcgaag gcaggtaggc
1380
cctccttcat ttgttcctga ttcaccatca atccctgttg gaagcccaaa ttttcttct
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1560
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1680
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1740
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1800
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1860
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1920
gcaactccaa atcaacagac gtatgcaaat tcagaagtag acaagctctc catggaaacc
1980
cctgccaaaa cagaagagat aaaactggaa aaggctgaga cagagtcctg cccaggccaa
2040
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2100
cctgtctcct cagcacagag tcctcccat tctgctgggg cccctgctgc caaaggagac
2160
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3180
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5820
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5940
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5954

<210> 3988
<211> 1817
<212> PRT
<213> Homo sapiens

<400> 3988
Asp Gly Ser Ile Thr His Gln Ile Ser Arg Pro Asn Pro Pro Asn Phe
1   5   10   15
Gly Pro Gly Phe Val Asn Asp Ser Gln Arg Lys Gln Tyr Glu Glu Trp
            20   25   30
Leu Gln Glu Thr Gln Gln Leu Leu Gln Met Gln Gln Lys Tyr Leu Glu
        35   40   45
Glu Gln Ile Gly Ala His Arg Lys Ser Lys Lys Ala Leu Ser Ala Lys

3154

```
            50                        55                        60
Gln Arg Thr Ala Lys Lys Ala Gly Arg Glu Phe Pro Glu Glu Asp Ala
65                        70                        75                        80
Glu Gln Leu Lys His Val Thr Glu Gln Gln Ser Met Val Gln Lys Gln
                    85                        90                        95
Leu Glu Gln Ile Arg Lys Gln Gln Lys Glu His Ala Glu Leu Ile Glu
                    100                       105                       110
Asp Tyr Arg Ile Lys Gln Gln Gln Gln Cys Ala Met Ala Pro Pro Thr
            115                       120                       125
Met Met Pro Ser Val Gln Pro Gln Pro Pro Leu Ile Pro Gly Ala Thr
            130                       135                       140
Pro Pro Thr Met Ser Gln Pro Thr Phe Pro Met Val Pro Gln Gln Leu
145                       150                       155                       160
Gln His Gln Gln His Thr Thr Val Ile Ser Gly His Thr Ser Pro Val
                    165                       170                       175
Arg Met Pro Ser Leu Pro Gly Trp Gln Pro Asn Ser Ala Pro Ala His
                    180                       185                       190
Leu Pro Leu Asn Pro Pro Arg Ile Gln Pro Pro Ile Ala Gln Leu Pro
            195                       200                       205
Ile Lys Thr Cys Thr Pro Ala Pro Gly Thr Val Ser Asn Ala Asn Pro
210                       215                       220
Gln Ser Gly Pro Pro Pro Arg Val Glu Phe Asp Asp Asn Asn Pro Phe
225                       230                       235                       240
Ser Glu Ser Phe Gln Glu Arg Glu Arg Lys Glu Arg Leu Arg Glu Gln
                    245                       250                       255
Gln Glu Arg Gln Arg Ile Gln Leu Met Gln Glu Val Asp Arg Gln Arg
            260                       265                       270
Ala Leu Gln Gln Arg Met Glu Met Glu Gln His Gly Met Val Gly Ser
            275                       280                       285
Glu Ile Ser Ser Ser Arg Thr Ser Val Ser Gln Ile Pro Phe Tyr Ser
            290                       295                       300
Ser Asp Leu Pro Cys Asp Phe Met Gln Pro Leu Gly Pro Leu Gln Gln
305                       310                       315                       320
Ser Pro Gln His Gln Gln Gln Met Gly Gln Val Leu Gln Gln Gln Asn
                    325                       330                       335
Ile Gln Gln Gly Ser Ile Asn Ser Pro Ser Thr Gln Thr Phe Met Gln
                    340                       345                       350
Thr Asn Glu Arg Arg Gln Val Gly Pro Pro Ser Phe Val Pro Asp Ser
            355                       360                       365
Pro Ser Ile Pro Val Gly Ser Pro Asn Phe Ser Ser Val Lys Gln Gly
            370                       375                       380
His Gly Asn Leu Ser Gly Thr Ser Phe Gln Gln Ser Pro Val Arg Pro
385                       390                       395                       400
Ser Phe Thr Pro Ala Leu Pro Ala Ala Pro Pro Val Ala Asn Ser Ser
                    405                       410                       415
Leu Pro Cys Gly Gln Asp Ser Thr Ile Thr His Gly His Ser Tyr Pro
                    420                       425                       430
Gly Ser Thr Gln Ser Leu Ile Gln Leu Tyr Ser Asp Ile Ile Pro Glu
            435                       440                       445
Glu Lys Lys Lys Lys Lys Arg Thr Arg Lys Lys Lys Arg Asp Asp Asp
            450                       455                       460
Ala Glu Ser Thr Lys Ala Pro Ser Thr Pro His Ser Asp Ile Thr Ala
465                       470                       475                       480
Pro Pro Thr Pro Gly Ile Ser Glu Thr Thr Ser Thr Pro Ala Val Ser
```

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                        485                  490                  495
Thr Pro Ser Glu Leu Pro Gln Gln Ala Asp Gln Glu Ser Val Glu Pro
                500                  505                  510
Val Gly Pro Ser Thr Pro Asn Met Ala Ala Gly Gln Leu Cys Thr Glu
                515                  520                  525
Leu Glu Asn Lys Leu Pro Asn Ser Asp Phe Ser Gln Ala Thr Pro Asn
            530                  535                  540
Gln Gln Thr Tyr Ala Asn Ser Glu Val Asp Lys Leu Ser Met Glu Thr
545                  550                  555                  560
Pro Ala Lys Thr Glu Glu Ile Lys Leu Glu Lys Ala Glu Thr Glu Ser
                565                  570                  575
Cys Pro Gly Gln Glu Glu Pro Lys Leu Glu Glu Gln Asn Gly Ser Lys
            580                  585                  590
Val Glu Gly Asn Ala Val Ala Cys Pro Val Ser Ser Ala Gln Ser Pro
            595                  600                  605
Pro His Ser Ala Gly Ala Pro Ala Ala Lys Gly Asp Ser Gly Asn Glu
        610                  615                  620
Leu Leu Lys His Leu Leu Lys Asn Lys Lys Ser Ser Ser Leu Leu Asn
625                  630                  635                  640
Gln Lys Pro Glu Gly Ser Ile Cys Ser Glu Asp Asp Cys Thr Lys Asp
                645                  650                  655
Asn Lys Leu Val Glu Lys Gln Asn Pro Ala Glu Gly Leu Gln Thr Leu
            660                  665                  670
Gly Ala Gln Met Gln Gly Gly Phe Gly Cys Gly Asn Gln Leu Pro Lys
            675                  680                  685
Thr Asp Gly Gly Ser Glu Thr Lys Lys Gln Arg Ser Lys Arg Thr Gln
        690                  695                  700
Arg Thr Gly Glu Lys Ala Ala Pro Arg Ser Lys Lys Arg Lys Lys Asp
705                  710                  715                  720
Glu Glu Glu Lys Gln Ala Met Tyr Ser Ser Thr Asp Thr Phe Thr His
                725                  730                  735
Leu Lys Gln Val Arg Gln Leu Ser Leu Leu Pro Leu Met Glu Pro Ile
            740                  745                  750
Ile Gly Val Asn Phe Ala His Phe Leu Pro Tyr Gly Ser Gly Gln Phe
            755                  760                  765
Asn Ser Gly Asn Arg Leu Leu Gly Thr Phe Gly Ser Ala Thr Leu Glu
        770                  775                  780
Gly Val Ser Asp Tyr Tyr Ser Gln Leu Ile Tyr Lys Gln Asn Asn Leu
785                  790                  795                  800
Ser Asn Pro Pro Thr Pro Pro Ala Ser Leu Pro Pro Thr Pro Pro Pro
                805                  810                  815
Met Ala Cys Gln Lys Met Ala Asn Gly Phe Ala Thr Thr Glu Glu Leu
            820                  825                  830
Ala Gly Lys Ala Gly Val Leu Val Ser His Glu Val Thr Lys Thr Leu
            835                  840                  845
Gly Pro Lys Pro Phe Gln Leu Pro Phe Arg Pro Gln Asp Asp Leu Leu
        850                  855                  860
Ala Arg Ala Leu Ala Gln Gly Pro Lys Thr Val Asp Val Pro Ala Ser
865                  870                  875                  880
Leu Pro Thr Pro Pro His Asn Asn Gln Glu Glu Leu Arg Ile Gln Asp
                885                  890                  895
His Cys Gly Asp Arg Asp Thr Pro Asp Ser Phe Val Pro Ser Ser Ser
            900                  905                  910
Pro Glu Ser Val Val Gly Val Glu Val Ser Arg Tyr Pro Asp Leu Ser
```

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                 915                      920                      925
Leu Val Lys Glu Glu Pro Pro Glu Pro Val Pro Ser Pro Ile Ile Pro
     930                      935                      940
Ile Leu Pro Ser Thr Ala Gly Lys Ser Ser Glu Ser Arg Arg Asn Asp
945                      950                      955                      960
Ile Lys Thr Glu Pro Gly Thr Leu Tyr Phe Ala Ser Pro Phe Gly Pro
                 965                      970                      975
Ser Pro Asn Gly Pro Arg Ser Gly Leu Ile Ser Val Ala Ile Thr Leu
                 980                      985                      990
His Pro Thr Ala Ala Glu Asn Ile Ser Ser Val Val Ala Ala Phe Ser
                 995                     1000                     1005
Asp Leu Leu His Val Arg Ile Pro Asn Ser Tyr Glu Val Ser Ser Ala
     1010                     1015                     1020
Pro Asp Val Pro Ser Met Gly Leu Val Ser Ser His Arg Ile Asn Pro
1025                     1030                     1035                     1040
Gly Leu Glu Tyr Arg Gln His Leu Leu Leu Arg Gly Pro Pro Pro Gly
                 1045                     1050                     1055
Ser Ala Asn Pro Pro Arg Leu Val Ser Ser Tyr Arg Leu Lys Gln Pro
                 1060                     1065                     1070
Asn Val Pro Phe Pro Pro Thr Ser Asn Gly Leu Ser Gly Tyr Lys Asp
                 1075                     1080                     1085
Ser Ser His Gly Ile Ala Glu Ser Ala Ala Leu Arg Pro Gln Trp Cys
     1090                     1095                     1100
Cys His Cys Lys Val Val Ile Leu Gly Ser Gly Val Arg Lys Ser Phe
1105                     1110                     1115                     1120
Lys Asp Leu Thr Leu Leu Asn Lys Asp Ser Arg Glu Ser Thr Lys Arg
                 1125                     1130                     1135
Val Glu Lys Asp Ile Val Phe Cys Ser Asn Asn Cys Phe Ile Leu Tyr
                 1140                     1145                     1150
Ser Ser Thr Ala Gln Ala Lys Asn Ser Glu Asn Lys Glu Ser Ile Pro
                 1155                     1160                     1165
Ser Leu Pro Gln Ser Pro Met Arg Glu Thr Pro Ser Lys Ala Phe His
     1170                     1175                     1180
Gln Tyr Ser Asn Asn Ile Ser Thr Leu Asp Val His Cys Leu Pro Gln
1185                     1190                     1195                     1200
Leu Pro Glu Lys Ala Ser Pro Pro Ala Ser Pro Pro Ile Ala Phe Pro
                 1205                     1210                     1215
Pro Ala Phe Glu Ala Ala Gln Val Glu Ala Lys Pro Asp Glu Leu Lys
                 1220                     1225                     1230
Val Thr Val Lys Leu Lys Pro Arg Leu Arg Ala Val His Gly Gly Phe
                 1235                     1240                     1245
Glu Asp Cys Arg Pro Leu Asn Lys Lys Trp Arg Gly Met Lys Trp Lys
     1250                     1255                     1260
Lys Trp Ser Ile His Ile Val Ile Pro Lys Gly Thr Phe Lys Pro Pro
1265                     1270                     1275                     1280
Cys Glu Asp Glu Ile Asp Glu Phe Leu Lys Lys Leu Gly Thr Ser Leu
                 1285                     1290                     1295
Lys Pro Asp Pro Val Pro Lys Asp Tyr Arg Lys Cys Cys Phe Cys His
                 1300                     1305                     1310
Glu Glu Gly Asp Gly Leu Thr Asp Gly Pro Ala Arg Leu Leu Asn Leu
     1315                     1320                     1325
Asp Leu Asp Leu Trp Val His Leu Asn Cys Ala Leu Trp Ser Thr Glu
     1330                     1335                     1340
Val Tyr Glu Thr Gln Ala Gly Ala Leu Ile Asn Val Glu Leu Ala Leu
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Arg Arg Gly Leu Gln Met Lys Cys Val Phe Cys His Lys Thr Gly Ala
                    1365                   1370                   1375
Thr Ser Gly Cys His Arg Phe Arg Cys Thr Asn Ile Tyr His Phe Thr
                1380                   1385                   1390
Cys Ala Ile Lys Ala Gln Cys Met Phe Phe Lys Asp Lys Thr Met Leu
            1395                   1400                   1405
Cys Pro Met His Lys Pro Lys Gly Ile His Glu Gln Glu Leu Ser Tyr
        1410                   1415                   1420
Phe Ala Val Phe Arg Arg Val Tyr Val Gln Arg Asp Glu Val Arg Gln
    1425                   1430                   1435                   1440
Ile Ala Ser Ile Val Gln Arg Gly Glu Arg Asp His Thr Phe Arg Val
                    1445                   1450                   1455
Gly Ser Leu Ile Phe His Thr Ile Gly Gln Leu Leu Pro Gln Gln Met
                1460                   1465                   1470
Gln Ala Phe His Ser Pro Lys Ala Leu Phe Pro Val Gly Tyr Glu Ala
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Ser Arg Leu Tyr Trp Ser Thr Arg Tyr Ala Asn Arg Arg Cys Arg Tyr
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Leu Cys Ser Ile Glu Glu Lys Asp Gly Arg Pro Val Phe Val Ile Arg
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Ile Val Glu Gln Gly His Glu Asp Leu Val Leu Ser Asp Ile Ser Pro
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Lys Gly Val Trp Asp Lys Ile Leu Glu Pro Val Ala Cys Val Arg Lys
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Lys Ser Glu Met Leu Gln Leu Phe Pro Ala Tyr Leu Lys Gly Glu Asp
            1555                   1560                   1565
Leu Phe Gly Leu Thr Val Ser Ala Val Ala Arg Ile Ala Glu Ser Leu
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Pro Gly Val Glu Ala Cys Glu Asn Tyr Thr Phe Arg Tyr Gly Arg Asn
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Pro Leu Met Glu Leu Pro Leu Ala Val Asn Pro Thr Gly Cys Ala Arg
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Ser Glu Pro Lys Met Ser Ala His Val Lys Arg Phe Val Leu Arg Pro
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His Thr Leu Asn Ser Thr Ser Thr Ser Lys Ser Phe Gln Ser Thr Val
            1635                   1640                   1645
Thr Gly Glu Leu Asn Ala Pro Tyr Ser Lys Gln Phe Val His Ser Lys
        1650                   1655                   1660
Ser Ser Gln Tyr Arg Lys Met Lys Thr Glu Trp Lys Ser Asn Val Tyr
    1665                   1670                   1675                   1680
Leu Ala Arg Ser Arg Ile Gln Gly Leu Gly Leu Tyr Ala Ala Arg Asp
                    1685                   1690                   1695
Ile Glu Lys His Thr Met Val Ile Glu Tyr Ile Gly Thr Ile Ile Arg
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Asn Glu Val Ala Asn Arg Lys Glu Lys Leu Tyr Glu Ser Gln Asn Arg
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Gly Val Tyr Met Phe Arg Met Asp Asn Asp His Val Ile Asp Ala Thr
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Leu Thr Gly Gly Pro Ala Arg Tyr Ile Asn His Ser Cys Ala Pro Asn
    1745                   1750                   1755                   1760
Cys Val Ala Glu Val Val Thr Phe Glu Arg Gly His Lys Ile Ile Ile
                    1765                   1770                   1775
Ser Ser Ser Arg Arg Ile Gln Lys Gly Glu Glu Leu Cys Tyr Asp Tyr
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             1780                 1785                 1790
Lys Phe Asp Phe Glu Asp Asp Gln His Lys Ile Pro Cys His Cys Gly
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Ala Val Asn Cys Arg Lys Trp Met Asn
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<210> 3989
<211> 4522
<212> DNA
<213> Homo sapiens

<400> 3989

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<210> 3990
<211> 955
<212> PRT
<213> Homo sapiens

<400> 3990
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            20                  25                  30
Arg Ser Arg Ser Leu Ser Arg Ser Arg Lys Arg Arg Leu Ser Ser Arg
            35                  40                  45
Ser Arg Ser Arg Ser Tyr Ser Pro Ala His Asn Arg Glu Arg Asn His
        50                  55                  60
Pro Arg Val Tyr Gln Asn Arg Asp Phe Arg Gly His Asn Arg Gly Tyr
65                  70                  75                  80
Arg Arg Pro Tyr Tyr Phe Arg Gly Arg Asn Arg Gly Phe Tyr Pro Trp
                85                  90                  95
Gly Gln Tyr Asn Arg Gly Gly Tyr Gly Asn Tyr Arg Ser Asn Trp Gln
            100                 105                 110
Asn Tyr Arg Gln Ala Tyr Ser Pro Arg Arg Gly Arg Ser Arg Ser Arg
            115                 120                 125
Ser Pro Lys Arg Arg Ser Pro Ser Pro Arg Ser Arg Ser His Ser Arg
        130                 135                 140
Asn Ser Asp Lys Ser Ser Ser Asp Arg Ser Arg Arg Ser Ser Ser Ser
145                 150                 155                 160
Arg Ser Ser Ser Asn His Ser Arg Val Glu Ser Ser Lys Arg Lys Ser
                165                 170                 175
Ala Lys Glu Lys Lys Ser Ser Ser Lys Asp Ser Arg Pro Ser Gln Ala
            180                 185                 190
Ala Gly Asp Asn Gln Gly Asp Glu Val Lys Glu Gln Thr Phe Ser Gly
            195                 200                 205
Gly Thr Ser Gln Asp Thr Lys Ala Ser Glu Ser Ser Lys Pro Trp Pro
        210                 215                 220
Asp Ala Thr Tyr Gly Thr Gly Ser Ala Ser Arg Ala Ser Ala Val Ser
225                 230                 235                 240
Glu Leu Ser Pro Arg Glu Arg Ser Pro Ala Leu Lys Ser Pro Leu Gln
                245                 250                 255
Ser Val Val Val Arg Arg Arg Ser Pro Arg Pro Ser Pro Val Pro Lys
            260                 265                 270
Pro Ser Pro Pro Leu Ser Ser Thr Ser Gln Met Gly Ser Thr Leu Pro
            275                 280                 285
Ser Gly Ala Gly Tyr Gln Ser Gly Thr His Gln Gly Gln Phe Asp His
        290                 295                 300
Gly Ser Gly Ser Leu Ser Pro Ser Lys Lys Ser Pro Val Gly Lys Ser
305                 310                 315                 320
Pro Pro Ser Thr Gly Ser Thr Tyr Gly Ser Ser Gln Lys Glu Glu Ser
                325                 330                 335
Ala Ala Ser Gly Gly Ala Ala Tyr Thr Lys Arg Tyr Leu Glu Glu Gln
            340                 345                 350
Lys Thr Glu Asn Gly Lys Asp Lys Glu Gln Lys Gln Thr Asn Thr Asp
```

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              355                      360                      365
Lys Glu Lys Ile Lys Glu Lys Gly Ser Phe Ser Asp Thr Gly Leu Gly
         370                  375                  380
Asp Gly Lys Met Lys Ser Asp Ser Phe Ala Pro Lys Thr Asp Ser Glu
385                  390                  395                  400
Lys Pro Phe Arg Gly Ser Gln Ser Pro Lys Arg Tyr Lys Leu Arg Asp
                 405                  410                  415
Asp Phe Glu Lys Lys Met Ala Asp Phe His Lys Glu Glu Met Asp Asp
              420                  425                  430
Gln Asp Lys Asp Lys Ala Lys Gly Arg Lys Glu Ser Glu Phe Asp Asp
              435                  440                  445
Glu Pro Lys Phe Met Ser Lys Val Ile Gly Ala Asn Lys Asn Gln Glu
         450                  455                  460
Glu Glu Lys Ser Gly Lys Trp Glu Gly Leu Val Tyr Ala Pro Pro Gly
465                  470                  475                  480
Lys Glu Lys Gln Arg Lys Thr Glu Glu Leu Glu Glu Glu Ser Phe Pro
                 485                  490                  495
Glu Arg Ser Lys Lys Glu Asp Arg Gly Lys Arg Ser Glu Gly Gly His
              500                  505                  510
Arg Gly Phe Val Pro Glu Lys Asn Phe Arg Val Thr Ala Tyr Lys Ala
         515                  520                  525
Val Gln Glu Lys Ser Ser Ser Pro Pro Pro Arg Lys Thr Ser Glu Ser
    530                  535                  540
Arg Asp Lys Leu Gly Ala Lys Gly Asp Phe Pro Thr Gly Lys Ser Ser
545                  550                  555                  560
Phe Ser Ile Thr Arg Glu Ala Gln Val Asn Val Arg Met Asp Ser Phe
                 565                  570                  575
Asp Glu Asp Leu Ala Arg Pro Ser Gly Leu Leu Ala Gln Glu Arg Lys
              580                  585                  590
Leu Cys Arg Asp Leu Val His Ser Asn Lys Lys Glu Gln Glu Phe Arg
         595                  600                  605
Ser Ile Phe Gln His Ile Gln Ser Ala Gln Ser Gln Arg Ser Pro Ser
    610                  615                  620
Glu Leu Phe Ala Gln His Ile Val Thr Ile Val His His Val Lys Glu
625                  630                  635                  640
His His Phe Gly Ser Ser Gly Met Thr Leu His Glu Arg Phe Thr Lys
                 645                  650                  655
Tyr Leu Lys Arg Gly Thr Glu Gln Glu Ala Ala Lys Asn Lys Lys Ser
              660                  665                  670
Pro Glu Ile His Arg Arg Ile Asp Ile Ser Pro Ser Thr Phe Arg Lys
         675                  680                  685
His Gly Leu Ala His Asp Glu Met Lys Ser Pro Arg Glu Pro Gly Tyr
         690                  695                  700
Lys Ala Glu Gly Lys Tyr Lys Asp Asp Pro Val Asp Leu Arg Leu Asp
705                  710                  715                  720
Ile Glu Arg Arg Lys Lys His Lys Glu Arg Asp Leu Lys Arg Gly Lys
                 725                  730                  735
Ser Arg Glu Ser Val Asp Ser Arg Asp Ser Ser His Ser Arg Glu Arg
              740                  745                  750
Ser Ala Glu Lys Thr Glu Lys Thr His Lys Gly Ser Lys Lys Gln Lys
         755                  760                  765
Lys His Arg Arg Ala Arg Asp Arg Ser Arg Ser Ser Ser Ser Ser Ser
    770                  775                  780
Gln Ser Ser His Ser Tyr Lys Ala Glu Glu Tyr Thr Glu Glu Thr Glu
```

```
          785                     790                     795                     800
Glu Arg Glu Glu Ser Thr Thr Gly Phe Asp Lys Ser Arg Leu Gly Thr
                    805                     810                     815
Lys Asp Phe Val Gly Pro Ser Glu Arg Gly Gly Gly Arg Ala Arg Gly
                820                     825                     830
Thr Phe Gln Phe Arg Ala Arg Gly Arg Gly Trp Gly Arg Gly Asn Tyr
            835                     840                     845
Ser Gly Asn Asn Asn Asn Asn Ser Asn Asn Asp Phe Gln Lys Arg Asn
        850                     855                     860
Arg Glu Glu Glu Trp Asp Pro Glu Tyr Thr Pro Lys Ser Lys Lys Tyr
865                     870                     875                     880
Tyr Leu His Asp Asp Arg Glu Gly Glu Gly Ser Asp Lys Trp Val Ser
                885                     890                     895
Arg Gly Arg Gly Arg Gly Ala Phe Pro Arg Gly Arg Gly Arg Phe Met
            900                     905                     910
Phe Arg Lys Ser Ser Thr Ser Pro Lys Trp Ala His Asp Lys Phe Ser
        915                     920                     925
Gly Glu Glu Gly Glu Ile Glu Asp Asp Glu Ser Gly Thr Glu Asn Arg
    930                     935                     940
Glu Glu Lys Asp Asn Ile Gln Pro Thr Thr Glu
945                     950                     955
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<210> 3991
<211> 381
<212> DNA
<213> Homo sapiens

<400> 3991
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120
cagggtatgt attatactcc accaccacaa tgtgtgtccc gctttgtccg acctccacca
180
tctgctcctg aacctgctcc tccctacttg gatcattatc accctacct ccaagaacgt
240
gttgtaaact ctcagtatgg cacacagcca cagcagtacc cacctatata cccatctcac
300
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381
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<210> 3992
<211> 127
<212> PRT
<213> Homo sapiens

<400> 3992
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Ala Gln Gln Thr Asp Val Tyr Tyr Gln Asp Pro Arg Gly Ala Ala Pro
            20                      25                      30
Pro Phe Glu Pro Ala Pro Tyr Gln Gln Gly Met Tyr Tyr Thr Pro Pro
```

```
              35                    40                    45
Pro Gln Cys Val Ser Arg Phe Val Arg Pro Pro Pro Ser Ala Pro Glu
      50                    55                    60
Pro Ala Pro Pro Tyr Leu Asp His Tyr Pro Pro Tyr Leu Gln Glu Arg
65                    70                    75                    80
Val Val Asn Ser Gln Tyr Gly Thr Gln Pro Gln Gln Tyr Pro Pro Ile
                  85                    90                    95
Tyr Pro Ser His Tyr Asp Gly Arg Arg Val Tyr Pro Ala Pro Ser Tyr
                100                   105                   110
Thr Arg Glu Glu Ile Phe Arg Glu Ser Pro Ile Pro Ile Glu Ile
          115                   120                   125
```

<210> 3993
<211> 394
<212> DNA
<213> Homo sapiens

<400> 3993
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120
ccggattgtg agggtgaaac tcccattcac aaggcagctc gctctgggag cctagaatgc
180
atcagtgccc ttgtggcgaa tggggctcac gtcgagtaag tgtctttcgt ttattctttc
240
cagctaaaga tgtagttgag gatgttttgt ttaaaggcag tacataagca ggcaaaagtc
300
ctaaaacttt gttttcaaaa ttagtaatgt aattttgcct tttagaacag ttggtgttag
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394
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<210> 3994
<211> 72
<212> PRT
<213> Homo sapiens

<400> 3994
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  1               5                    10                   15
Glu Thr Ser Ala Ala Val Ala Ser His Arg Leu Pro Ser Gly Ala Arg
              20                    25                    30
Thr Glu Gly Ala Asn Ile Asn Lys Pro Asp Cys Glu Gly Glu Thr Pro
          35                    40                    45
Ile His Lys Ala Ala Arg Ser Gly Ser Leu Glu Cys Ile Ser Ala Leu
      50                    55                    60
Val Ala Asn Gly Ala His Val Glu
65                    70
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<210> 3995
<211> 715
<212> DNA
<213> Homo sapiens

<400> 3995
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<210> 3996
<211> 235
<212> PRT
<213> Homo sapiens

<400> 3996
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            20   25   30
Ser Ser Ser Val Arg Arg Thr Gln Ala Ile Arg Arg Arg His Asn Ala
        35   40   45
Gly Ser Asn Pro Thr Pro Pro Ala Ser Val Met Gly Ser Pro Pro Ser
    50   55   60
Ser Leu Gln Glu Ala Gln Arg Gly Arg Ala Ala Ser His Ser Arg Ala
65   70   75   80
Leu Thr Leu Pro Ser Ala Leu His Phe Ala Ser Ser Leu Leu Leu Thr
                85   90   95
Arg Ala Gly Ala Asn Val His Glu Ala Cys Thr Phe Asp Asp Thr Ser
            100   105   110
Glu Gly Ala Val His Tyr Phe Tyr Asp Glu Ser Gly Val Arg Arg Ser
        115   120   125
Tyr Thr Phe Gly Leu Ala Gly Gly Gly Tyr Glu Asn Pro Val Gly Gln
    130   135   140
Gln Gly Glu Gln Thr Ala Asn Gly Ala Trp Asp Arg His Ser His Ser
145   150   155   160
Ser Ser Phe His Ser Ala Asp Val Pro Glu Ala Thr Gly Gly Leu Asn
                165   170   175
Leu Leu Gln Pro Arg Pro Val Val Leu Gln Gly Met Gln Val Arg Arg

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            180                    185                    190
Val Pro Leu Glu Ile Pro Glu Phe Asp Leu Leu Asp Gln Asp Ser Leu
            195                    200                    205
His Glu Ser Gln Glu Gln Thr Leu Met Glu Glu Ala Pro Pro Arg Ala
        210                    215                    220
Gln His Ser Tyr Lys Tyr Leu Gly Phe Gly Glu
225                    230                    235
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<210> 3997
<211> 7484
<212> DNA
<213> Homo sapiens

<400> 3997

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180
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240
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300
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360
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420
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480
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540
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660
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720
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<400> 3998
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Glu Ala Glu Ala Phe Ala Leu Tyr His Lys Ala Leu Asp Leu Gln Lys
        35   40   45
His Asp Arg Phe Glu Glu Ser Ala Lys Ala Tyr His Glu Leu Leu Glu
    50   55   60
Ala Ser Leu Leu Arg Glu Ala Val Ser Ser Gly Asp Glu Lys Glu Gly
65   70   75   80
Leu Lys His Pro Gly Leu Ile Leu Lys Tyr Ser Thr Tyr Lys Asn Leu
                85   90   95
Ala Gln Leu Ala Ala Gln Arg Glu Asp Leu Glu Thr Ala Met Glu Phe
            100   105   110
Tyr Leu Glu Ala Val Met Leu Asp Ser Thr Asp Val Asn Leu Trp Tyr
        115   120   125
Lys Ile Gly His Val Ala Leu Arg Leu Ile Arg Ile Pro Leu Ala Arg
    130   135   140
His Ala Phe Glu Glu Gly Leu Arg Cys Asn Pro Asp His Trp Pro Cys
145   150   155   160
Leu Asp Asn Leu Ile Thr Val Leu Tyr Thr Leu Ser Asp Tyr Thr Thr
                165   170   175
Cys Leu Tyr Phe Ile Cys Lys Ala Leu Glu Lys Asp Cys Arg Tyr Ser
            180   185   190
Lys Gly Leu Val Leu Lys Glu Lys Ile Phe Glu Glu Gln Pro Cys Leu
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Arg Lys Asp Ser Leu Arg Met Phe Leu Lys Cys Asp Met Ser Ile His
    210   215   220
Asp Val Ser Val Ser Ala Ala Glu Thr Gln Ala Ile Val Asp Glu Ala
225   230   235   240
Leu Gly Leu Arg Lys Lys Arg Gln Ala Leu Ile Val Arg Glu Lys Glu
                245   250   255
Pro Asp Leu Lys Leu Val Gln Pro Ile Pro Phe Phe Thr Trp Lys Cys
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Leu Gly Glu Ser Leu Leu Ala Met Tyr Asn His Leu Thr Thr Cys Glu
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Pro Pro Arg Pro Ser Leu Gly Lys Arg Ile Asp Leu Ser Asp Tyr Gln
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Asp Pro Ser Gln Pro Leu Glu Ser Ser Met Val Val Thr Pro Val Asn
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Val Ile Gln Pro Ser Thr Val Ser Thr Asn Pro Ala Val Ala Val Ala
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Glu Pro Val Val Ser Tyr Thr Ser Val Ala Thr Thr Ser Phe Pro Leu
            340   345   350
His Ser Pro Gly Leu Leu Glu Thr Gly Ala Pro Val Gly Asp Ile Ser
        355   360   365
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Glu Ser Gly Glu Thr Ala Lys Arg Arg Ser Ala Arg Val Arg Asn Thr
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Lys Cys Lys Lys Glu Glu Lys Val Asp Phe Gln Glu Leu Leu Met Lys
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Phe Leu Pro Ser Arg Leu Arg Lys Leu Asp Pro Glu Glu Glu Asp Asp

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Pro Ser Ile Gly Pro Gln Arg Leu Ser Phe Asp Ser Ala Thr Phe Met
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Glu Ser Glu Lys Gln Asp Val His Glu Phe Leu Leu Glu Asn Leu Thr
465                    470                    475                    480
Asn Gly Gly Ile Leu Glu Leu Met Met Arg Tyr Leu Lys Ala Met Gly
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His Lys Phe Leu Val Arg Trp Pro Pro Gly Leu Ala Glu Val Val Leu
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Ser Val Tyr His Ser Trp Arg Arg His Ser Thr Ser Leu Pro Asn Pro
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Leu Leu Arg Asp Cys Ser Asn Lys His Ile Lys Asp Met Met Leu Met
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Ser Leu Ser Cys Met Glu Leu Gln Leu Asp Gln Trp Leu Leu Thr Lys
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Gly Arg Ser Ser Ala Val Ser Pro Arg Asn Cys Pro Ala Gly Met Val
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Asn Gly Arg Phe Gly Pro Asp Phe Pro Gly Thr His Cys Leu Gly Asp
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Leu Leu Gln Leu Ser Phe Ala Ser Ser Gln Arg Asp Leu Phe Glu Asp
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Gly Trp Leu Glu Phe Val Val Arg Val Tyr Trp Leu Lys Ala Arg Phe
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Leu Ala Leu Gln Gly Asp Met Glu Gln Ala Leu Glu Asn Tyr Asp Ile
625                    630                    635                    640
Cys Thr Glu Met Leu Gln Ser Ser Thr Ala Ile Gln Val Glu Ala Gly
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Ala Glu Arg Arg Asp Ile Val Ile Arg Leu Pro Asn Leu His Asn Asp
             660                    665                    670
Ser Val Val Ser Leu Glu Glu Ile Asp Lys Asn Leu Lys Ser Leu Glu
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Arg Cys Gln Ser Leu Glu Glu Ile Gln Arg Leu Tyr Glu Ala Gly Asp
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Tyr Lys Ala Val Val His Leu Leu Arg Pro Thr Leu Cys Thr Ser Gly
705                    710                    715                    720
Phe Asp Arg Ala Lys His Leu Glu Phe Met Thr Ser Ile Pro Glu Arg
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Pro Ala Gln Leu Leu Leu Leu Gln Asp Ser Leu Leu Arg Leu Lys Asp
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Tyr Arg Gln Cys Phe Glu Cys Ser Asp Val Ala Leu Asn Glu Ala Val
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Gln Gln Met Val Asn Ser Gly Glu Ala Ala Lys Glu Glu Trp Val
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Ala Thr Val Thr Gln Leu Leu Met Gly Ile Glu Gln Ala Leu Ser Ala
785                    790                    795                    800
Asp Ser Ser Gly Ser Ile Leu Lys Val Ser Ser Thr Thr Gly Leu
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Val Arg Leu Thr Asn Asn Leu Ile Gln Val Ile Asp Cys Ser Met Ala
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Val Gln Glu Glu Ala Lys Glu Pro His Val Ser Ser Val Leu Pro Trp
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Ile Ile Leu His Arg Ile Ile Trp Gln Glu Glu Asp Thr Phe His Ser
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Glu Thr Pro Met Leu Pro Ser Ser Leu Met Leu Leu Asn Thr Ala His
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Glu Tyr Leu Gly Arg Arg Ser Trp Cys Cys Asn Ser Asp Gly Ala Leu
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Leu Arg Phe Tyr Val Arg Val Leu Gln Lys Glu Leu Ala Ala Ser Thr
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Ser Glu Asp Thr His Pro Tyr Lys Glu Glu Leu Glu Thr Ala Leu Glu
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Gln Cys Phe Tyr Cys Leu Tyr Ser Phe Pro Ser Lys Lys Ser Lys Ala
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Arg Tyr Leu Glu Glu His Ser Ala Gln Gln Val Asp Leu Ile Trp Glu
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Asp Ala Leu Phe Met Phe Glu Tyr Phe Lys Pro Lys Thr Leu Pro Glu
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Lys Ala Ile Lys Phe Tyr Met His Asp Ile Cys Ile Cys Pro Asn Arg
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Pro Pro Glu Leu Val Gln Gln Met Glu Gly Arg Arg Asp Ser Met Leu
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Glu Thr Ala Lys His Cys Phe Thr Ser Ala Ala Arg Cys Glu Gly Asp
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Ala Gly His Tyr Leu His Glu Glu Ala Ala Arg Tyr Pro Lys Lys Ile
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His Tyr His Asn Pro Pro Glu Leu Ala Met Glu Ala Leu Glu Val Tyr
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Phe Arg Leu His Ala Ser Ile Leu Lys Leu Leu Gly Lys Pro Asp Ser
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Gly Val Gly Ala Glu Val Leu Val Asn Phe Met Lys Glu Ala Ala Glu
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3174

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Lys Cys Lys Lys Pro His Gln Gln Ala Thr Pro Asp Asp Arg Ser Gln
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Phe Asn Glu Pro Thr Ser Leu Leu Glu Gly Ser Arg Lys Ser Tyr Thr
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Glu Lys Arg Leu Pro Ile Leu Ser Ser Gln Ala Gly Ala Thr Gly Lys
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Tyr Thr Tyr Ser Lys Thr His Arg Asn Leu Gln Trp Ala Arg Asp Val
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Glu Leu Ala Arg Val Ala Glu Gly Thr Ser Phe Pro Pro Gln Glu Pro
         2020                    2025                    2030
Arg His Ser Pro Gln Val Lys Met Ala Pro Thr Ser Ser Pro Ala Glu
         2035                    2040                    2045
Pro His Cys Trp Pro Ala Glu Ala Ala Leu Gly Thr Gly Ala Glu Pro
    2050                    2055                    2060
Thr Cys Ser Gln Glu Gly Lys Leu Arg Pro Glu Pro Arg Arg Asp Gly
2065                    2070                    2075                    2080
Glu Ala Gln Glu Ala Ala Ser Glu Thr Gln Pro Leu Ser Ser Pro Pro
                 2085                    2090                    2095
Thr Ala Ala Ser Ser Lys Ala Pro Ser Ser Gly Ser Ala Gln Pro Pro
         2100                    2105                    2110
Glu Gly His Pro Gly Lys Pro Glu Pro Ser Arg Ala Lys Ser Arg Pro
         2115                    2120                    2125
Leu Pro Asn Met Pro Lys Leu Val Ile Pro Ser Ala Ala Thr Lys Phe
    2130                    2135                    2140
Pro Pro Glu Ile Thr Val Thr Pro Pro Thr Pro Thr Leu Leu Ser Pro
```

```
2145                  2150                  2155                  2160
Lys Gly Ser Ile Ser Glu Glu Thr Lys Gln Lys Leu Lys Ser Ala Ile
                 2165                  2170                  2175
Leu Ser Ala Gln Ser Ala Ala Asn Val Arg Lys Glu Ser Leu Cys Gln
            2180                  2185                  2190
Pro Ala Leu Glu Val Leu Glu Thr Ser Ser Gln Glu Ser Ser Leu Glu
          2195                  2200                  2205
Ser Glu Thr Asp Glu Asp Asp Asp Tyr Met Asp Ile
     2210                  2215                  2220
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<210> 3999
<211> 2546
<212> DNA
<213> Homo sapiens
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<400> 3999
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gagagttttg tgtttttcat ttacgcaaac acatctccac ataagtaggg aaaaaaagtc
120
ttcttgagta tattagtgtc ttcagccttt gtattgggac agtagcgtcc attaattttt
180
atgtgaagtg aaattaggta tcgggtcata atcagtctgt gatgtcttca cagctttcac
240
atttaccttg tgataatcaa gtgtgttttt cctcaggtgt tagccagaga agaggggtca
300
gggactcttc cctggtcgta gctttcatct gtaagcttca cttaaagaga ggaaacttac
360
ttggtgctca aagcaaagga gatgggcctc ccagttggga cagctgccat cgctcccatc
420
attgctgctg tcaaggacgg gaaaagcatc actcatgaag aagagagat tttggctgaa
480
gagctgtgta ctcctccaga tcctggtgct gcttttgtgg tggtagaatg tccagatgaa
540
agcttcattc aacccatctg tgagaatgcc acctttcaga ggtaccaagg aaaggcagat
600
gcccccgtgg ccttggtggt tcacatggcc ccagcatctg tgcttgtgga cagcaggtac
660
cagcagtgga tggagaggtt tgggcctgac acccagcact tggtcctgaa tgagaactgt
720
gcctcagttc acaaccttcg cagccacaag attcaaaccc agctcaacct catccacccg
780
gacatcttcc ccctgctcac cagtttccgc tgtaagaagg agggccccac cctcagtgtg
840
cccatggttc agggtgaatg cctcctcaag taccagctcc gtcccaggag ggagtggcag
900
agggatgcca ttattacttg caatcctgag gaattcatag ttgaggcgct gcagcttccc
960
aacttccagc agagcgtgca ggagtacagg aggagtgcgc aggacggccc agccccagca
1020
gagaaaagaa gtcagtaccc agaaatcatc ttccttggaa cagggtctgc catcccgatg
1080
aagattcgaa atgtcagtgc cacacttgtc aacataagcc ccgacacgtc tctgctactg
1140
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gactgtggtg agggcacatt tgggcagctg tgccgtcatt acggagacca ggtggacagg
1200
gtcctgggca ccctggctgc tgtgtttgtg tcccacctgc acgcagatca ccacacgggc
1260
ttgccaagta tcttgctgca gagagaacgc gccttggcat ctttgggaaa gccgcttcac
1320
cctttgctgg tggttgcccc caaccagctc aaagcctggc tccagcagta ccacaaccag
1380
tgccaggagg tcctgcacca catcagtatg attcctgcca aatgccttca ggaagggggct
1440
gagatctcca gtcctgcagt ggaaagattg atcagttcgc tgttgcgaac atgtgatttg
1500
gaagagtttc agacctgtct ggtgcggcac tgcaagcatg cgtttggctg tgcgctggtg
1560
cacacctctg gctggaaagt ggtctattcc ggggacacca tgccctgcga ggctctggtc
1620
cggatggggga aagatgccac cctcctgata catgaagcca ccctggaaga tggtttggaa
1680
gaggaagcag tggaaaagac acacagcaca acgtcccaag ccatcagcgt ggggatgcgg
1740
atgaacgcgg agttcattat gctgaaccac ttcagccagc gctatgccaa ggtccccctc
1800
ttcagcccca acttcagcga gaaagtggga gttgcctttg accacatgaa ggtctgcttt
1860
ggagactttc aacaatgcc caagctgatt cccccactg aaagccctgt ttgctggcga
1920
catcgaggag atggaggagc gcagggagaa gcgggagctg cggcaggtgc gggcggccct
1980
cctgtccagg gagctggcag gcggcctgga ggatggggag cctcagcaga agcgggccca
2040
cacagaggag ccacaggcca agaaggtcag agcccagtga agatctggga gaccctgaac
2100
tcagaaggct gtgtgtcttc tgccccacgc acgcacccgt atctgccctc cttgctggta
2160
gaagctgaag agcacggtcc cccaggaggc agctcaggat aggtggtatg gagctgtgcc
2220
gaggcttggg ctcccacata agcactagtc tatagatgcc tcttaggact ggtgcctggc
2280
acagccgcgg gccaggaggc tgccacacgg aagcaagcag atgaactaat ttcatttcaa
2340
ggcagttttt aaagaagtca tggaaacaga cggcggcacc tttcctctaa tccagcaaaa
2400
tgattccctg cacaccagag acaagcagag taacaggatc agtgggtcta agtgtccgag
2460
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2520
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2546

<210> 4000
<211> 606
<212> PRT
<213> Homo sapiens

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<400> 4000
Met Gly Leu Pro Val Gly Thr Ala Ala Ile Ala Pro Ile Ile Ala Ala
 1               5                  10                  15
Val Lys Asp Gly Lys Ser Ile Thr His Glu Gly Arg Glu Ile Leu Ala
            20                  25                  30
Glu Glu Leu Cys Thr Pro Pro Asp Pro Gly Ala Ala Phe Val Val Val
            35                  40                  45
Glu Cys Pro Asp Glu Ser Phe Ile Gln Pro Ile Cys Glu Asn Ala Thr
         50                  55                  60
Phe Gln Arg Tyr Gln Gly Lys Ala Asp Ala Pro Val Ala Leu Val Val
65                  70                  75                  80
His Met Ala Pro Ala Ser Val Leu Val Asp Ser Arg Tyr Gln Gln Trp
                85                  90                  95
Met Glu Arg Phe Gly Pro Asp Thr Gln His Leu Val Leu Asn Glu Asn
               100                 105                 110
Cys Ala Ser Val His Asn Leu Arg Ser His Lys Ile Gln Thr Gln Leu
               115                 120                 125
Asn Leu Ile His Pro Asp Ile Phe Pro Leu Leu Thr Ser Phe Arg Cys
         130                 135                 140
Lys Lys Glu Gly Pro Thr Leu Ser Val Pro Met Val Gln Gly Glu Cys
145                 150                 155                 160
Leu Leu Lys Tyr Gln Leu Arg Pro Arg Arg Glu Trp Gln Arg Asp Ala
               165                 170                 175
Ile Ile Thr Cys Asn Pro Glu Glu Phe Ile Val Glu Ala Leu Gln Leu
               180                 185                 190
Pro Asn Phe Gln Gln Ser Val Gln Glu Tyr Arg Arg Ser Ala Gln Asp
         195                 200                 205
Gly Pro Ala Pro Ala Glu Lys Arg Ser Gln Tyr Pro Glu Ile Ile Phe
210                 215                 220
Leu Gly Thr Gly Ser Ala Ile Pro Met Lys Ile Arg Asn Val Ser Ala
225                 230                 235                 240
Thr Leu Val Asn Ile Ser Pro Asp Thr Ser Leu Leu Leu Asp Cys Gly
               245                 250                 255
Glu Gly Thr Phe Gly Gln Leu Cys Arg His Tyr Gly Asp Gln Val Asp
               260                 265                 270
Arg Val Leu Gly Thr Leu Ala Ala Val Phe Val Ser His Leu His Ala
         275                 280                 285
Asp His His Thr Gly Leu Pro Ser Ile Leu Leu Gln Arg Glu Arg Ala
         290                 295                 300
Leu Ala Ser Leu Gly Lys Pro Leu His Pro Leu Leu Val Val Ala Pro
305                 310                 315                 320
Asn Gln Leu Lys Ala Trp Leu Gln Gln Tyr His Asn Gln Cys Gln Glu
               325                 330                 335
Val Leu His His Ile Ser Met Ile Pro Ala Lys Cys Leu Gln Glu Gly
         340                 345                 350
Ala Glu Ile Ser Ser Pro Ala Val Glu Arg Leu Ile Ser Ser Leu Leu
         355                 360                 365
Arg Thr Cys Asp Leu Glu Glu Phe Gln Thr Cys Leu Val Arg His Cys
370                 375                 380
Lys His Ala Phe Gly Cys Ala Leu Val His Thr Ser Gly Trp Lys Val
385                 390                 395                 400
Val Tyr Ser Gly Asp Thr Met Pro Cys Glu Ala Leu Val Arg Met Gly
               405                 410                 415
Lys Asp Ala Thr Leu Leu Ile His Glu Ala Thr Leu Glu Asp Gly Leu
```

```
              420                    425                    430
Glu Glu Glu Ala Val Glu Lys Thr His Ser Thr Thr Ser Gln Ala Ile
          435                    440                    445
Ser Val Gly Met Arg Met Asn Ala Glu Phe Ile Met Leu Asn His Phe
      450                    455                    460
Ser Gln Arg Tyr Ala Lys Val Pro Leu Phe Ser Pro Asn Phe Ser Glu
465                    470                    475                    480
Lys Val Gly Val Ala Phe Asp His Met Lys Val Cys Phe Gly Asp Phe
                  485                    490                    495
Pro Thr Met Pro Lys Leu Ile Pro Pro Thr Glu Ser Pro Val Cys Trp
              500                    505                    510
Arg His Arg Gly Asp Gly Gly Ala Gln Gly Glu Ala Gly Ala Ala Ala
          515                    520                    525
Gly Ala Gly Gly Pro Pro Val Gln Gly Ala Gly Arg Arg Pro Gly Gly
      530                    535                    540
Trp Gly Ala Ser Ala Glu Ala Gly Pro His Arg Gly Ala Thr Gly Gln
545                    550                    555                    560
Glu Gly Gln Ser Pro Val Lys Ile Trp Glu Thr Leu Asn Ser Glu Gly
                  565                    570                    575
Cys Val Ser Ser Ala Pro Arg Thr His Pro Tyr Leu Pro Ser Leu Leu
              580                    585                    590
Val Glu Ala Glu Glu His Gly Pro Pro Gly Gly Ser Ser Gly
          595                    600                    605


<210> 4001
<211> 1251
<212> DNA
<213> Homo sapiens

<400> 4001
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60
cagagctctc cagagttcaa gggctccctg gcctccctct cagacagctt gggggtgtct
120
gtcatggcca ccgaccagga ctcctactcc accagcagca cggaggagga gctggagcag
180
ttcagcagcc ccagcgtgaa gaagaagccc tccatgatcc tgggcaaggc tcggcaccgg
240
ctgagctttg ccagtttcag cagcatgttc cacgctttcc tctccaacaa ccgcaagctg
300
tacaagaagg tggtggagct ggcgcaggac aagggctcgt actttggcag cctggtgcag
360
gactacaagg tgtacagcct ggagatgatg gcgcgccaga cctccagcac ggagatgctg
420
caggagattc gcaccatgat gacccagctc aagagctacc tgctgcagag caccgagctc
480
aaggccctgg tggaccccgc cctgcactcc gaggaggagc tcgaagcaat tgtagagtct
540
gccttgtaca atgtgtcct gaagcccctg aaggaagcca tcaactcatg cctgcatcag
600
atccacagca aggatggttc gctgcagcag ctcaaggaga accagttagt gatcctggcc
660
accaccacca ctgacctagg tgtgaccacc agcgtgccgg aggtgcccat gatggagaag
720
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atcctgcaga agttcaccag catgcacaag gcctactcac ctgagaagaa gatctccatc
780
ctgctcaaga cctgcaaact catctacgac tccatggccc tcggcaaccc agggaagccc
840
tatggggcgg atgacttcct gcctgtgctc atgtatgtgc tggcccgcag caacctcacg
900
gagatgcttc tcaatgtgga gtacatgatg gagctcatgg accccgccct gcagctgggg
960
gagggttcct actatctgac caccacctac ggggccctgg agcacatcaa gagctacgac
1020
aagatcacgg tgacccggca gctgagtgtg gaggtgcagg actccatcca ccgctgggag
1080
cgccggcgta ctctcaacaa ggcccgggcc tcccgctcct ccgtacagga cttcatctgc
1140
gtgtcgtacc tggagcccga gcagcaggcg cggacgctgg cgtcgcgggc ggacacccag
1200
gcccaggcgc tgtgcgcgca gtgcgcggag aagttcgcgg tggagcggcc g
1251

<210> 4002
<211> 417
<212> PRT
<213> Homo sapiens

<400> 4002
Glu Ser Pro Ala Ser Gln Ala Gly Thr Gln His Pro Pro Ala Gln Pro
 1   5   10   15
Thr Ala His Ser Gln Ser Ser Pro Glu Phe Lys Gly Ser Leu Ala Ser
            20   25   30
Leu Ser Asp Ser Leu Gly Val Ser Val Met Ala Thr Asp Gln Asp Ser
            35   40   45
Tyr Ser Thr Ser Ser Thr Glu Glu Glu Leu Glu Gln Phe Ser Ser Pro
        50   55   60
Ser Val Lys Lys Lys Pro Ser Met Ile Leu Gly Lys Ala Arg His Arg
65   70   75   80
Leu Ser Phe Ala Ser Phe Ser Ser Met Phe His Ala Phe Leu Ser Asn
                85   90   95
Asn Arg Lys Leu Tyr Lys Lys Val Val Glu Leu Ala Gln Asp Lys Gly
            100   105   110
Ser Tyr Phe Gly Ser Leu Val Gln Asp Tyr Lys Val Tyr Ser Leu Glu
        115   120   125
Met Met Ala Arg Gln Thr Ser Ser Thr Glu Met Leu Gln Glu Ile Arg
    130   135   140
Thr Met Met Thr Gln Leu Lys Ser Tyr Leu Leu Gln Ser Thr Glu Leu
145   150   155   160
Lys Ala Leu Val Asp Pro Ala Leu His Ser Glu Glu Glu Leu Glu Ala
                165   170   175
Ile Val Glu Ser Ala Leu Tyr Lys Cys Val Leu Lys Pro Leu Lys Glu
            180   185   190
Ala Ile Asn Ser Cys Leu His Gln Ile His Ser Lys Asp Gly Ser Leu
            195   200   205
Gln Gln Leu Lys Glu Asn Gln Leu Val Ile Leu Ala Thr Thr Thr Thr
    210   215   220
Asp Leu Gly Val Thr Thr Ser Val Pro Glu Val Pro Met Met Glu Lys

```
225                        230                        235                        240
Ile Leu Gln Lys Phe Thr Ser Met His Lys Ala Tyr Ser Pro Glu Lys
                    245                        250                        255
Lys Ile Ser Ile Leu Leu Lys Thr Cys Lys Leu Ile Tyr Asp Ser Met
                    260                        265                        270
Ala Leu Gly Asn Pro Gly Lys Pro Tyr Gly Ala Asp Asp Phe Leu Pro
                275                        280                        285
Val Leu Met Tyr Val Leu Ala Arg Ser Asn Leu Thr Glu Met Leu Leu
            290                        295                        300
Asn Val Glu Tyr Met Met Glu Leu Met Asp Pro Ala Leu Gln Leu Gly
305                        310                        315                        320
Glu Gly Ser Tyr Tyr Leu Thr Thr Thr Tyr Gly Ala Leu Glu His Ile
                    325                        330                        335
Lys Ser Tyr Asp Lys Ile Thr Val Thr Arg Gln Leu Ser Val Glu Val
                340                        345                        350
Gln Asp Ser Ile His Arg Trp Glu Arg Arg Arg Thr Leu Asn Lys Ala
                355                        360                        365
Arg Ala Ser Arg Ser Ser Val Gln Asp Phe Ile Cys Val Ser Tyr Leu
            370                        375                        380
Glu Pro Glu Gln Gln Ala Arg Thr Leu Ala Ser Arg Ala Asp Thr Gln
385                        390                        395                        400
Ala Gln Ala Leu Cys Ala Gln Cys Ala Glu Lys Phe Ala Val Glu Arg
                    405                        410                        415
Pro
```

<210> 4003
<211> 581
<212> DNA
<213> Homo sapiens

<400> 4003

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ctctgcgggg ccgtggcgct cggctgcgcg ctgctcctcg ccctcaagtt cacctgcagt
120
cgagcaaaag atgtgataat accagcaaag ccacctgtca gctttttctc cttgaggtct
180
ccagtccttg acctcttcca ggggcagctg gattatgcag agtacgttcg acgggattca
240
gaggtggtac tgctcttctt ctatgcccct tggtgtggac agtccatcgc tgccagggca
300
gaaattgagc aagcagcaag tcggctttca gatcaggtgt tgtttgtggc aattaactgt
360
tggtggaacc aggggaaatg cagaaaacag aaacacttct tttatttttcc tgtaatatat
420
ctgtatcatc ggagttttgg accaatcgaa tacaaaggcc cccatgagtg ctgtttacat
480
tgagaagttt gtccgccggg tgatgaaacc acttctctac atcccatctc aatcagaatt
540
actagatttt ctctcaaact acgagcctgg agtactcgcg a
581
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<210> 4004

<211> 160
<212> PRT
<213> Homo sapiens

<400> 4004
Xaa Arg Leu Arg Arg Gly Leu Arg Gly Ala Phe Leu Met Ala Arg Gln
 1   5   10   15
Arg Pro Glu Leu Leu Cys Gly Ala Val Ala Leu Gly Cys Ala Leu Leu
            20   25   30
Leu Ala Leu Lys Phe Thr Cys Ser Arg Ala Lys Asp Val Ile Ile Pro
        35   40   45
Ala Lys Pro Pro Val Ser Phe Phe Ser Leu Arg Ser Pro Val Leu Asp
    50   55   60
Leu Phe Gln Gly Gln Leu Asp Tyr Ala Glu Tyr Val Arg Arg Asp Ser
65   70   75   80
Glu Val Val Leu Leu Phe Phe Tyr Ala Pro Trp Cys Gly Gln Ser Ile
                85   90   95
Ala Ala Arg Ala Glu Ile Glu Gln Ala Ala Ser Arg Leu Ser Asp Gln
            100   105   110
Val Leu Phe Val Ala Ile Asn Cys Trp Trp Asn Gln Gly Lys Cys Arg
        115   120   125
Lys Gln Lys His Phe Phe Tyr Phe Pro Val Ile Tyr Leu Tyr His Arg
    130   135   140
Ser Phe Gly Pro Ile Glu Tyr Lys Gly Pro His Glu Cys Cys Leu His
145   150   155   160

<210> 4005
<211> 666
<212> DNA
<213> Homo sapiens

<400> 4005
ggtaccttgg aggatggtgc caagcagcac aatctaacag cagtcaatgt ccgaaacatc
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cttcatgaag taatcacaaa tgaacacgtg gtagctatga tgaaagcagc catcagtgag
120
acggaagata tgccaatgtt tgagcctaaa atgacacgct ctaaactgaa ggaagtagtg
180
gaaaaaggaa tggtaattcc aacatggaat atttcaccaa ttaagaaggc caatgaaatt
240
aagcctcctc agtttgtgga tatccacctt gaagaagatg attcctcaga tgaagaatac
300
cagccggatg atgaagaaga agatgaaact gctgaagaga gcttattgga aagtgatgtt
360
gaaagcactg cttcatctcc acgtggggca aagaaatcca gattgaggca gtcttctgag
420
atgactgaaa cagatgagga gagtggcata ttatcagagg ctgagaaagt caccacacca
480
gccatcaggc acatcagtgc tgaggtagtg cccatggggc ccccgccccc tccaaagccg
540
aaacagacca gagatagtac tttcatggag aagttacatg cggtagatga ggagctggct
600
tccagtccag tctgcatgga ttctttccag cccatggatg acagtctcat tgcatttcga
660

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acgcgt
666


<210> 4006
<211> 222
<212> PRT
<213> Homo sapiens


<400> 4006
Gly Thr Leu Glu Asp Gly Ala Lys Gln His Asn Leu Thr Ala Val Asn
 1               5                  10                  15
Val Arg Asn Ile Leu His Glu Val Ile Thr Asn Glu His Val Val Ala
                20                  25                  30
Met Met Lys Ala Ala Ile Ser Glu Thr Glu Asp Met Pro Met Phe Glu
            35                  40                  45
Pro Lys Met Thr Arg Ser Lys Leu Lys Glu Val Val Glu Lys Gly Met
        50                  55                  60
Val Ile Pro Thr Trp Asn Ile Ser Pro Ile Lys Lys Ala Asn Glu Ile
65                  70                  75                  80
Lys Pro Pro Gln Phe Val Asp Ile His Leu Glu Glu Asp Asp Ser Ser
                85                  90                  95
Asp Glu Glu Tyr Gln Pro Asp Asp Glu Glu Glu Asp Glu Thr Ala Glu
            100                 105                 110
Glu Ser Leu Leu Glu Ser Asp Val Glu Ser Thr Ala Ser Ser Pro Arg
        115                 120                 125
Gly Ala Lys Lys Ser Arg Leu Arg Gln Ser Ser Glu Met Thr Glu Thr
        130                 135                 140
Asp Glu Glu Ser Gly Ile Leu Ser Glu Ala Glu Lys Val Thr Thr Pro
145                 150                 155                 160
Ala Ile Arg His Ile Ser Ala Glu Val Val Pro Met Gly Pro Pro Pro
                165                 170                 175
Pro Pro Lys Pro Lys Gln Thr Arg Asp Ser Thr Phe Met Glu Lys Leu
            180                 185                 190
His Ala Val Asp Glu Glu Leu Ala Ser Ser Pro Val Cys Met Asp Ser
            195                 200                 205
Phe Gln Pro Met Asp Asp Ser Leu Ile Ala Phe Arg Thr Arg
        210                 215                 220


<210> 4007
<211> 2313
<212> DNA
<213> Homo sapiens


<400> 4007
ngaattcttc cttggcttcg agtctctcag ccggccgcgc tctccgatgc ccagccctcc
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tggaaccacc tcgcctgtga cgtaggtgga gcgcgcactg cctccgggcc cgtctttctc
120
aattgggacc ggaaaacgtt gtcgctcatc ctatgacgcg aaagtaaccg agactatcag
180
gatccggaga cggaaatgtc cgaaggccgc agtacttgac cctgtatttt gggagtcgaa
240
cggagaatgg aaactgaaag tggaaatcag gaaaaggtaa tggaagaaga aagcactgaa
300
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aagaaaaaag aagttgaaaa aaagaaacgg tcacgagtta aacaggtgct tgcagatatt
360
gctaagcaag tggacttctg gtttggggat gcaaatcttc acaaggatag atttcttcga
420
gaacagatag aaaaatctag agatggatat gttgatatat cactacttgt gtcttttaac
480
aaaatgaaaa aattgactac tgatgggaag ttaattgcca gagcattgag aagttcagct
540
gttgtagagc ttgatttgga aggcaccaga atccggagga aaaaacctct gggggaaaga
600
ccaaaggatg aggatgaacg cacagtgtat gtggagttac ttcccaaaaa tgttaatcac
660
agctggattg aaagagtatt tgggaaatgt ggcaatgttg tttatataag tataccacat
720
tataagtcta ctggagatcc aaagggattt gcgtttgtgg aatttgaaac aaaagaacaa
780
gcagcaaaag caattgagtt tcttaacaac ccaccagaag aagcaccaag aaaacctggc
840
atatttccta aaacagtgaa aaataagccc attccagcct taagagttgt ggaagagaag
900
aaaaagaaaa agaagaagaa aggccgaatg aaaaaggaag acaatatcca agccaaagaa
960
gaaaacatgg acacaagcaa caccagcatc agtaaaatga aaagatccag acccacatct
1020
gagggctctg acattgagtc cactgaaccc caaaagcagt gctcaaagaa aaagaaaaaa
1080
cgggacagag ttgaagcatc tagcttacct gaagtcagaa cagggaagag gaagagaagc
1140
agctctgaag atgcagaatc cctagctccc cgatcaaaag taaagaaaat tattcagaaa
1200
gacatcatta aggaagcatc agaagcttcc aaggaaaata gagatataga aatctctact
1260
gaagaggaaa aggatactgg agatctaaaa gatagctctc tcttgaaaac aaaaaggaaa
1320
cataagaaaa aacataaaga gagacataaa atgggagaag aagttatacc attaagagtg
1380
ctatcaaaga gcgaatggat ggatttgaaa aaagagtatt tagcgctaca aaaagctagc
1440
atggcttctt taaaaaaaac aatatcccaa ataaaatcag agtcagaaat ggaaacagac
1500
agtggagtac ctcaaaacac tggaatgaaa aatgaaaaaa cagccaacag gaagagtgt
1560
cgcacccagg agaaagttaa tgcaacagga ccacagttcg tgagtggagt gattgtgaag
1620
atcattagca cagagcctct acctggcagg aaacaagtcc gggatacttt ggcagcaatc
1680
tcagaagttc tttatgttga tttgctagaa ggggatacag aatgccatgc tagatttaaa
1740
actcctgagg atgctcaagc agtaataaat gcctatacag aaattaacaa gaaacactgc
1800
tggaaactcg agatcctttc tggtgatcac gaacaaggt attggcagaa gattttggtt
1860
gatagacagg caaaacttaa tcagcctcgg gaaaagaaaa gaggcactga aaagttaatc
1920
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accaaagctg aaaagattag actggcaaag actcaacaag cgagtaaaca tataagattt
1980
tctgaatatg attgaaaaaa aaaacagttc acctcttaat acttcacaag atacttgagc
2040
tgttcttggg agattcactt ttattatggt agcactgcat aattaatgtg tttttaatta
2100
aaagaaatat ctttgttcct taacttgtaa ataagacttt tttctagaga caaatatgat
2160
gtataccaca atttttctta aacattttat ttgttgaaat tatcttagat gtcagtgtca
2220
ggtgatttag taaataaatg tgttttgaac attaaaaaaa aaaaaaaaaa aaaaaaaaa
2280
aaaaaaaaaa aaagaaaaaa aaaaaaaaaa aaa
2313

<210> 4008
<211> 290
<212> PRT
<213> Homo sapiens

<400> 4008
Gly Lys Arg Lys Arg Ser Ser Ser Glu Asp Ala Glu Ser Leu Ala Pro
 1   5   10   15
Arg Ser Lys Val Lys Lys Ile Ile Gln Lys Asp Ile Ile Lys Glu Ala
                20   25   30
Ser Glu Ala Ser Lys Glu Asn Arg Asp Ile Glu Ile Ser Thr Glu Glu
            35   40   45
Glu Lys Asp Thr Gly Asp Leu Lys Asp Ser Ser Leu Leu Lys Thr Lys
        50   55   60
Arg Lys His Lys Lys Lys His Lys Glu Arg His Lys Met Gly Glu Glu
65   70   75   80
Val Ile Pro Leu Arg Val Leu Ser Lys Ser Glu Trp Met Asp Leu Lys
                85   90   95
Lys Glu Tyr Leu Ala Leu Gln Lys Ala Ser Met Ala Ser Leu Lys Lys
            100   105   110
Thr Ile Ser Gln Ile Lys Ser Glu Ser Glu Met Glu Thr Asp Ser Gly
        115   120   125
Val Pro Gln Asn Thr Gly Met Lys Asn Glu Lys Thr Ala Asn Arg Glu
    130   135   140
Glu Cys Arg Thr Gln Glu Lys Val Asn Ala Thr Gly Pro Gln Phe Val
145   150   155   160
Ser Gly Val Ile Val Lys Ile Ile Ser Thr Glu Pro Leu Pro Gly Arg
                165   170   175
Lys Gln Val Arg Asp Thr Leu Ala Ala Ile Ser Glu Val Leu Tyr Val
            180   185   190
Asp Leu Leu Glu Gly Asp Thr Glu Cys His Ala Arg Phe Lys Thr Pro
        195   200   205
Glu Asp Ala Gln Ala Val Ile Asn Ala Tyr Thr Glu Ile Asn Lys Lys
    210   215   220
His Cys Trp Lys Leu Glu Ile Leu Ser Gly Asp His Glu Gln Arg Tyr
225   230   235   240
Trp Gln Lys Ile Leu Val Asp Arg Gln Ala Lys Leu Asn Gln Pro Arg
                245   250   255
Glu Lys Lys Arg Gly Thr Glu Lys Leu Ile Thr Lys Ala Glu Lys Ile

```
              260                265                270
Arg Leu Ala Lys Thr Gln Gln Ala Ser Lys His Ile Arg Phe Ser Glu
        275                280                285
Tyr Asp
    290
```

<210> 4009
<211> 675
<212> DNA
<213> Homo sapiens

<400> 4009

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nnagatcttt cgcttgcctt ttgtccttcc tcttctttgg aaaacatgtc tgtccaagat
60
ccagcatcat cacccagtat acaagatggt ggtctaatgc aagcctctgt acccggtcct
120
tcagaagaac cagtagttta taatccaaca acagctgcct catctgtga ctcacttgtg
180
aatgaaaaaa ccataggcag tcctcctaat gagttttact gttctgaaaa cacttctgtc
240
cctaacgaat ctaacaagat tcttgttaat aaagatgtac ctcagaaacc aggaggtgaa
300
accacacctt cagtaactga cttactaaat tattttttgg ctccagagat tcttactggt
360
gataaccaat attattgtga aaactgtgcc tctctgcaaa atgctgagaa aactatgcaa
420
atcacggagg aacctgaata ccttattctt actctcctga gattttcata tgatcagaag
480
tatcatgtga gaaggaaaat tttagacaat gtatcactgc cactggtttt ggagttgcca
540
gttaaaagaa ttacttcttt ctcttcattg tcagaaagtt ggtctgtaga tgttgacttc
600
actgatctta gtgagaacct gctaaaaaa ttaaagcctt cagggactga tgaagcttcc
660
tgcacaaaat tggtg
675
```

<210> 4010
<211> 225
<212> PRT
<213> Homo sapiens

<400> 4010

```
Xaa Asp Leu Ser Leu Ala Phe Cys Pro Ser Ser Ser Leu Glu Asn Met
  1                5                10                15
Ser Val Gln Asp Pro Ala Ser Ser Pro Ser Ile Gln Asp Gly Gly Leu
            20                25                30
Met Gln Ala Ser Val Pro Gly Pro Ser Glu Glu Pro Val Val Tyr Asn
        35                40                45
Pro Thr Thr Ala Ala Phe Ile Cys Asp Ser Leu Val Asn Glu Lys Thr
    50                55                60
Ile Gly Ser Pro Pro Asn Glu Phe Tyr Cys Ser Glu Asn Thr Ser Val
65                70                75                80
Pro Asn Glu Ser Asn Lys Ile Leu Val Asn Lys Asp Val Pro Gln Lys
```

```
                    85                    90                     95
Pro Gly Gly Glu Thr Thr Pro Ser Val Thr Asp Leu Leu Asn Tyr Phe
                   100                   105                   110
Leu Ala Pro Glu Ile Leu Thr Gly Asp Asn Gln Tyr Tyr Cys Glu Asn
                   115                   120                   125
Cys Ala Ser Leu Gln Asn Ala Glu Lys Thr Met Gln Ile Thr Glu Glu
               130                   135                   140
Pro Glu Tyr Leu Ile Leu Thr Leu Leu Arg Phe Ser Tyr Asp Gln Lys
145                   150                   155                   160
Tyr His Val Arg Arg Lys Ile Leu Asp Asn Val Ser Leu Pro Leu Val
                   165                   170                   175
Leu Glu Leu Pro Val Lys Arg Ile Thr Ser Phe Ser Ser Leu Ser Glu
                   180                   185                   190
Ser Trp Ser Val Asp Val Asp Phe Thr Asp Leu Ser Glu Asn Leu Ala
               195                   200                   205
Lys Lys Leu Lys Pro Ser Gly Thr Asp Glu Ala Ser Cys Thr Lys Leu
       210                   215                   220
Val
225


<210> 4011
<211> 1371
<212> DNA
<213> Homo sapiens

<400> 4011
ctgcaggacg tggttccgac agtcaagatg gcgggagcag ctacccaggc ttccctggag
60
tcggccccac ggatcatgcg gctggtggcc gaatgcagcc gctccagggc ccgggcaggc
120
gagctgtggc tgccgcatgg gacagtggcc actcctgtgt tcatgccagt gggcacgcag
180
gccaccatga agggcatcac gaccgaacag ctggacgctc tgggttgccg catctgcctg
240
ggcaatacct accatctggg tctaaggccg gacccgagc tgatccagaa agccaacggt
300
ctccacggct tcatgaattg gcctcataat ctgctaacgc tttgcggtgg ggtttccctt
360
gacagcggcg gtttccagat ggtgtcgctg gtgtctctgt ccgaggtgac ggaggagggc
420
gtccgcttcc gctccccta cgacggcaat gagaccctgc tgagcccgga gaaatccgtg
480
cagatccaga atgcgctggg ctcggacatc atcatgcagc tggacgacgt ggttagcagt
540
actgtgactg ggccacgtgt ggaggaggcc atgtacaggt caatccgctg gctggaccgg
600
tgcattgcag cccatcagcg gccggacaag cagaacctct cgccattat ccagggtggg
660
ctggacgcag atctccgggc cacctgcctt gaagagatga ccaagcgaga cgtgcctggc
720
ttcgccatcg ggggcctgag cgggggtgag agcaagtcgc agttctggcg gatggtggcg
780
ctgagcacct ctcggctgcc gaaggacaag ccccgatatc tgatggggt tggctatgcc
840
```

actgatctgg tagtctgcgt ggctcttgga tgtgacatgt tcgactgcgt cttccccaca
900
cggacagcgc gctttggctc tgccctggtg cccactggga acctgcagtt gaggaagaag
960
gtgtttgaga aggacttcgg ccccatagac ccggagtgca cctgccccac gtgccaaaag
1020
cacagccgcg ccttcctgca cgcactgctg cacagtgaca acacggccgc gctgcaccac
1080
ctcacggtcc acaacatcgc ctaccagctg cagctcatga gcgccgtccg caccagcatc
1140
gtggagaagc gcttcccgga cttcgtgcgg gacttcatgg cgccatgta cggggatccc
1200
accctctgtc ccacctgggc cactgacgct ctggcctctg tgggaatcac actgggctga
1260
cctggcattg ggagagggag ggaggaagga agggagggag gggctggaag atactgaagg
1320
attccttttt gaaaggtttt ttttattgta aaaaaaaaaa aaaaaaaaaa a
1371

<210> 4012
<211> 419
<212> PRT
<213> Homo sapiens

<400> 4012
Leu Gln Asp Val Val Pro Thr Val Lys Met Ala Gly Ala Ala Thr Gln
1   5   10   15
Ala Ser Leu Glu Ser Ala Pro Arg Ile Met Arg Leu Val Ala Glu Cys
            20   25   30
Ser Arg Ser Arg Ala Arg Ala Gly Glu Leu Trp Leu Pro His Gly Thr
        35   40   45
Val Ala Thr Pro Val Phe Met Pro Val Gly Thr Gln Ala Thr Met Lys
    50   55   60
Gly Ile Thr Thr Glu Gln Leu Asp Ala Leu Gly Cys Arg Ile Cys Leu
65   70   75   80
Gly Asn Thr Tyr His Leu Gly Leu Arg Pro Gly Pro Glu Leu Ile Gln
                85   90   95
Lys Ala Asn Gly Leu His Gly Phe Met Asn Trp Pro His Asn Leu Leu
            100   105   110
Thr Leu Cys Gly Gly Val Ser Leu Asp Ser Gly Gly Phe Gln Met Val
            115   120   125
Ser Leu Val Ser Leu Ser Glu Val Thr Glu Glu Gly Val Arg Phe Arg
        130   135   140
Ser Pro Tyr Asp Gly Asn Glu Thr Leu Leu Ser Pro Glu Lys Ser Val
145   150   155   160
Gln Ile Gln Asn Ala Leu Gly Ser Asp Ile Ile Met Gln Leu Asp Asp
                165   170   175
Val Val Ser Ser Thr Val Thr Gly Pro Arg Val Glu Glu Ala Met Tyr
            180   185   190
Arg Ser Ile Arg Trp Leu Asp Arg Cys Ile Ala Ala His Gln Arg Pro
            195   200   205
Asp Lys Gln Asn Leu Phe Ala Ile Ile Gln Gly Gly Leu Asp Ala Asp
    210   215   220
Leu Arg Ala Thr Cys Leu Glu Glu Met Thr Lys Arg Asp Val Pro Gly

```
225                   230                   235                   240
Phe Ala Ile Gly Gly Leu Ser Gly Gly Glu Ser Lys Ser Gln Phe Trp
                245                   250                   255
Arg Met Val Ala Leu Ser Thr Ser Arg Leu Pro Lys Asp Lys Pro Arg
                260                   265                   270
Tyr Leu Met Gly Val Gly Tyr Ala Thr Asp Leu Val Val Cys Val Ala
                275                   280                   285
Leu Gly Cys Asp Met Phe Asp Cys Val Phe Pro Thr Arg Thr Ala Arg
                290                   295                   300
Phe Gly Ser Ala Leu Val Pro Thr Gly Asn Leu Gln Leu Arg Lys Lys
305                   310                   315                   320
Val Phe Glu Lys Asp Phe Gly Pro Ile Asp Pro Glu Cys Thr Cys Pro
                325                   330                   335
Thr Cys Gln Lys His Ser Arg Ala Phe Leu His Ala Leu Leu His Ser
                340                   345                   350
Asp Asn Thr Ala Ala Leu His His Leu Thr Val His Asn Ile Ala Tyr
                355                   360                   365
Gln Leu Gln Leu Met Ser Ala Val Arg Thr Ser Ile Val Glu Lys Arg
        370                   375                   380
Phe Pro Asp Phe Val Arg Asp Phe Met Gly Ala Met Tyr Gly Asp Pro
385                   390                   395                   400
Thr Leu Cys Pro Thr Trp Ala Thr Asp Ala Leu Ala Ser Val Gly Ile
                405                   410                   415
Thr Leu Gly
```

```
<210> 4013
<211> 1419
<212> DNA
<213> Homo sapiens

<400> 4013
nggatcccta tggtggaata taaactcgac agcgagggca cccccctgcga gtataaaacc
60
cccttcagga ggaacaccac gtggcaccgg gtgcccactc ctgccctgca gcccctctct
120
agagcttccc ccatccccgg cacgcccgac cggctgccgt gccaacagct gctccagcag
180
gcccaggctg ccattcctcg aagcacctcc ttcgaccgga agctgcccga tggcacgaga
240
agctcaccca gcaaccagtc atcctccagc gaccctggac ccggcgggag cggaccctgg
300
agaccacaag tgggctacga cgggtgccag tcccctctac tgctcgaaca ccagggctca
360
ggcccttttgg aatgtgacgg agccagggag agggaagaca ccatggaagc aagcaggcac
420
ccggaaacca atggcatgg cccaccttcc aaagtcctgg gttcctataa agaaagagct
480
ctgcagaaag atggaagttg caaagattcc cccaataagc tttctcacat tggggataaa
540
agttgctcca gtcactccag cagcaacacg ctctccagca cacctccag caacagtgac
600
gacaagcact ttgggtctgg cgacctgatg accccgaat tactggggct gacctacatc
660
```

```
aaagggggcct ccaccgacag tggcatcgac acggccccct gcatgcctgc caccatcctc
720
ggccctgtgc acctggcagg cagcaggtcc ctgatccaca gccgggccga gcagtgggct
780
gatgctgccg acgtctctgg gcctgacgac gagccagcca agttatattc tgtgcatggc
840
tacgcgtcca ccatctccgc cggcagtgct gcggaaggca gcatgggcga tctcagtgag
900
atatcctctc attccagtgg ttctcaccat tcaggaagcc cttcagctca ctgttcaaaa
960
agtagtgggt ctctggattc atccaaagtc tacatcgtgt ctcacagcag cggacaacag
1020
gttcccgggt ccatgtccaa gccctaccac agacaagggg cagtgaacaa atatgtcatc
1080
ggctggaaga atcggagggg cagcccaccg cccgaggagc ctgaagtgac tgaatgtccc
1140
gggatgtata gtgagttgga tgtcatgtcc acagcaactc agcatcagac agtggtggga
1200
gatgctgttg cagagactca acatgttctg tctaaagaag attttctgaa attgatgctt
1260
cctgacagcc ccttagtgga ggaggggcga agaaagtttt cgttctatgg gaacctgtct
1320
ccaaggaggt cgctttaccg cacgctgtct gacgagagca tctgcagcaa caggaggggg
1380
tcctcctttg gcagttcccg gagttccgtg cttgaccag
1419


<210> 4014
<211> 473
<212> PRT
<213> Homo sapiens

<400> 4014
Xaa Ile Pro Met Val Glu Tyr Lys Leu Asp Ser Glu Gly Thr Pro Cys
 1               5                  10                  15
Glu Tyr Lys Thr Pro Phe Arg Arg Asn Thr Thr Trp His Arg Val Pro
             20                  25                  30
Thr Pro Ala Leu Gln Pro Leu Ser Arg Ala Ser Pro Ile Pro Gly Thr
         35                  40                  45
Pro Asp Arg Leu Pro Cys Gln Gln Leu Leu Gln Gln Ala Gln Ala Ala
     50                  55                  60
Ile Pro Arg Ser Thr Ser Phe Asp Arg Lys Leu Pro Asp Gly Thr Arg
 65                  70                  75                  80
Ser Ser Pro Ser Asn Gln Ser Ser Ser Asp Pro Gly Pro Gly Gly
                 85                  90                  95
Ser Gly Pro Trp Arg Pro Gln Val Gly Tyr Asp Gly Cys Gln Ser Pro
                 100                 105                 110
Leu Leu Leu Glu His Gln Gly Ser Gly Pro Leu Glu Cys Asp Gly Ala
             115                 120                 125
Arg Glu Arg Glu Asp Thr Met Glu Ala Ser Arg His Pro Glu Thr Lys
         130                 135                 140
Trp His Gly Pro Pro Ser Lys Val Leu Gly Ser Tyr Lys Glu Arg Ala
145                 150                 155                 160
Leu Gln Lys Asp Gly Ser Cys Lys Asp Ser Pro Asn Lys Leu Ser His
```

```
                        165                    170                    175
Ile Gly Asp Lys Ser Cys Ser Ser His Ser Ser Ser Asn Thr Leu Ser
                180                    185                    190
Ser Asn Thr Ser Ser Asn Ser Asp Asp Lys His Phe Gly Ser Gly Asp
                195                    200                    205
Leu Met Asp Pro Glu Leu Leu Gly Leu Thr Tyr Ile Lys Gly Ala Ser
            210                    215                    220
Thr Asp Ser Gly Ile Asp Thr Ala Pro Cys Met Pro Ala Thr Ile Leu
225                    230                    235                    240
Gly Pro Val His Leu Ala Gly Ser Arg Ser Leu Ile His Ser Arg Ala
                    245                    250                    255
Glu Gln Trp Ala Asp Ala Ala Asp Val Ser Gly Pro Asp Asp Glu Pro
                260                    265                    270
Ala Lys Leu Tyr Ser Val His Gly Tyr Ala Ser Thr Ile Ser Ala Gly
            275                    280                    285
Ser Ala Ala Glu Gly Ser Met Gly Asp Leu Ser Glu Ile Ser Ser His
            290                    295                    300
Ser Ser Gly Ser His His Ser Gly Ser Pro Ser Ala His Cys Ser Lys
305                    310                    315                    320
Ser Ser Gly Ser Leu Asp Ser Ser Lys Val Tyr Ile Val Ser His Ser
                325                    330                    335
Ser Gly Gln Gln Val Pro Gly Ser Met Ser Lys Pro Tyr His Arg Gln
                340                    345                    350
Gly Ala Val Asn Lys Tyr Val Ile Gly Trp Lys Lys Ser Glu Gly Ser
            355                    360                    365
Pro Pro Pro Glu Glu Pro Glu Val Thr Glu Cys Pro Gly Met Tyr Ser
    370                    375                    380
Glu Leu Asp Val Met Ser Thr Ala Thr Gln His Gln Thr Val Val Gly
385                    390                    395                    400
Asp Ala Val Ala Glu Thr Gln His Val Leu Ser Lys Glu Asp Phe Leu
                405                    410                    415
Lys Leu Met Leu Pro Asp Ser Pro Leu Val Glu Glu Gly Arg Arg Lys
                420                    425                    430
Phe Ser Phe Tyr Gly Asn Leu Ser Pro Arg Arg Ser Leu Tyr Arg Thr
            435                    440                    445
Leu Ser Asp Glu Ser Ile Cys Ser Asn Arg Arg Gly Ser Ser Phe Gly
    450                    455                    460
Ser Ser Arg Ser Ser Val Leu Asp Gln
465                    470
```

```
<210> 4015
<211> 823
<212> DNA
<213> Homo sapiens

<400> 4015
cgcttcgaga agcagaagta cctttccacg ccggacagaa tagatcttgc tgagtccctg
60
ggcctgagcc agttgcaggt gaagacgtgg taccagaatc ggaggatgaa gtggaagaaa
120
atagtgctgc agggcggcgg cctggagtct cccaccaagc ccaagggcg gcccaagaag
180
aactcaattc caacgagcga gcagcttact gagcaggagc gcgccaagga tgcagagaaa
240
```

cccgcggagg tgccgggcga gcccagcgac aggagccgcg aggactgagg gcggtatacg
300
gtgcggggcc tgggatgccc gcgccacccg cagcccctc actcggcgga aacccgcgag
360
ccggccctc cgcgtccaag aagtttactt cctaagcctt ttattatgat cttgaatgcg
420
gacaattggg gccaaacgag gaaggacaca gacccaaaag ccagacccag gtcccagcgc
480
gcttctgggc tctaacctgg gagactcgca tccagcccgg cggaagctac agtctctacc
540
ctgagctccg tggcgcagag cgctccacgc gtattcacgc cccgctcctc gcctgcaccc
600
ccgccccgtc tggggcctgc cctcccggcc ggggagcctc caggcacaca cccgcttctg
660
gacgtcgggg acccagcggt tgggctcagc cacaacggcc tgagattgcc ccggggcaac
720
ccgtcggcat gcctggaggc cgggtccccg atgtcgctgg ggcccctacc ccctcgtgcg
780
aagacggtga cttttttcc aataaaatat tttatgacac aaa
823

<210> 4016
<211> 95
<212> PRT
<213> Homo sapiens

<400> 4016
Arg Phe Glu Lys Gln Lys Tyr Leu Ser Thr Pro Asp Arg Ile Asp Leu
 1   5   10   15
Ala Glu Ser Leu Gly Leu Ser Gln Leu Gln Val Lys Thr Trp Tyr Gln
            20   25   30
Asn Arg Arg Met Lys Trp Lys Lys Ile Val Leu Gln Gly Gly Gly Leu
        35   40   45
Glu Ser Pro Thr Lys Pro Lys Gly Arg Pro Lys Lys Asn Ser Ile Pro
    50   55   60
Thr Ser Glu Gln Leu Thr Glu Gln Glu Arg Ala Lys Asp Ala Glu Lys
65   70   75   80
Pro Ala Glu Val Pro Gly Glu Pro Ser Asp Arg Ser Arg Glu Asp
                85   90   95

<210> 4017
<211> 1521
<212> DNA
<213> Homo sapiens

<400> 4017
nnactagggg attaccatga tgcagtagca gccatgctgc cctttcttgc tggccacgct
60
gggcaccgcc gccctcaata gcagcaaccc gaagactatt gctacagtgc ccggatccgc
120
agcaccgtcc tacagggcct gccctttggg ggcgtcccca ccgtgctggc cttggacttc
180
acgtgcttcc tcgccctgct gttcttattc tccatcctcc ggaaggtggc ctgggactat
240

```
gggcggctgg ccttggtgac agatgcagac aggcttcggc ggcaggagag ggaccgagtg
300
gaacaggaat atgtggcttc agctatgcac ggggacagcc atgaccggta tgagcgtctc
360
acctttgtct ccagctccgt tgactttgac caaagggaca atggtttctg ttcctggctg
420
acagccatct tcaggataaa ggacgatgag atccgggaca agtgtggggg cgacgctgtg
480
cactacctgt cctttcagcg gcacatcatc gggctgctgg tggttgtggg cgtcctctcc
540
gtaggcatcg tgctgcctgt caacttctca ggggacctgc tggagaacaa tgcctacagc
600
tttgggagaa ccaccattgc caacttgaaa tcagggaaca acctgctatg gctgcacacc
660
tccttcgcct tcctgtatct gctgctcacc gtctacagca tgcgtagaca cacctccaag
720
atgcgctaca aggaggatga tctggtgaag cggaccctct tcatcaatgg aatctccaaa
780
tatgcagagt cagaaaagat caagaagcat tttgaggaag cctaccccaa ctgcacagtt
840
ctcgaagccc gcccgtgtta caacgtggct cgcctaatgt tcctcgatgc agagaggaag
900
aaggccgagc ggggaaagct gtacttcaca aacctccaga gcaaggagaa cgtgcctacc
960
atgatcaacc ccaagccctg tggccacttc tgctgctgtg tggtgcgagg ctgtgagcag
1020
gtggaggcca ttgagtacta cacaaagctg gagcagaagc tgaaggaaga ctacaagcgg
1080
gagaagggga aggtgaatga gaagcctctt ggcatggcct ttgtcacctt ccacaatgag
1140
actatcaccg ccatcatcct gaaggacttc aacgtgtgta aatgccaggg ctgcacctgc
1200
cgtggggagc cacgcccctc atcctgcagc gagtcccttc acatccccaa ctggaccggg
1260
tcctatgccc ctgaccctca gaacatctac tgggagcacc tctccatccg aggcttcatc
1320
tggtggctgc gctgcctggt catcaatgtc gtcctcttca tcctcctctt cttcctcacc
1380
actccagcca tcatcatcac caccatggac aagttcaacg tcaccaagcc tgtggagtac
1440
ctcaacaacc ccatcatcac ccagttcttc cccaccctgc tgctgtggtg cttctcggcc
1500
ctccttccca ccattggcta c
1521

<210> 4018
<211> 480
<212> PRT
<213> Homo sapiens

<400> 4018
Gln Gln Pro Glu Asp Tyr Cys Tyr Ser Ala Arg Ile Arg Ser Thr Val
 1               5                  10                  15
Leu Gln Gly Leu Pro Phe Gly Gly Val Pro Thr Val Leu Ala Leu Asp
```

3194

```
                20                  25                  30
Phe Thr Cys Phe Leu Ala Leu Leu Phe Leu Phe Ser Ile Leu Arg Lys
        35                  40                  45
Val Ala Trp Asp Tyr Gly Arg Leu Ala Leu Val Thr Asp Ala Asp Arg
        50                  55                  60
Leu Arg Arg Gln Glu Arg Asp Arg Val Glu Gln Glu Tyr Val Ala Ser
65                  70                  75                  80
Ala Met His Gly Asp Ser His Asp Arg Tyr Glu Arg Leu Thr Phe Val
                85                  90                  95
Ser Ser Ser Val Asp Phe Asp Gln Arg Asp Asn Gly Phe Cys Ser Trp
            100                 105                 110
Leu Thr Ala Ile Phe Arg Ile Lys Asp Asp Glu Ile Arg Asp Lys Cys
            115                 120                 125
Gly Gly Asp Ala Val His Tyr Leu Ser Phe Gln Arg His Ile Ile Gly
            130                 135                 140
Leu Leu Val Val Val Gly Val Leu Ser Val Gly Ile Val Leu Pro Val
145                 150                 155                 160
Asn Phe Ser Gly Asp Leu Leu Glu Asn Asn Ala Tyr Ser Phe Gly Arg
                165                 170                 175
Thr Thr Ile Ala Asn Leu Lys Ser Gly Asn Asn Leu Leu Trp Leu His
            180                 185                 190
Thr Ser Phe Ala Phe Leu Tyr Leu Leu Leu Thr Val Tyr Ser Met Arg
            195                 200                 205
Arg His Thr Ser Lys Met Arg Tyr Lys Glu Asp Asp Leu Val Lys Arg
        210                 215                 220
Thr Leu Phe Ile Asn Gly Ile Ser Lys Tyr Ala Glu Ser Glu Lys Ile
225                 230                 235                 240
Lys Lys His Phe Glu Glu Ala Tyr Pro Asn Cys Thr Val Leu Glu Ala
                245                 250                 255
Arg Pro Cys Tyr Asn Val Ala Arg Leu Met Phe Leu Asp Ala Glu Arg
            260                 265                 270
Lys Lys Ala Glu Arg Gly Lys Leu Tyr Phe Thr Asn Leu Gln Ser Lys
            275                 280                 285
Glu Asn Val Pro Thr Met Ile Asn Pro Lys Pro Cys Gly His Phe Cys
        290                 295                 300
Cys Cys Val Val Arg Gly Cys Glu Gln Val Glu Ala Ile Glu Tyr Tyr
305                 310                 315                 320
Thr Lys Leu Glu Gln Lys Leu Lys Glu Asp Tyr Lys Arg Glu Lys Gly
            325                 330                 335
Lys Val Asn Glu Lys Pro Leu Gly Met Ala Phe Val Thr Phe His Asn
            340                 345                 350
Glu Thr Ile Thr Ala Ile Ile Leu Lys Asp Phe Asn Val Cys Lys Cys
        355                 360                 365
Gln Gly Cys Thr Cys Arg Gly Glu Pro Arg Pro Ser Ser Cys Ser Glu
        370                 375                 380
Ser Leu His Ile Pro Asn Trp Thr Gly Ser Tyr Ala Pro Asp Pro Gln
385                 390                 395                 400
Asn Ile Tyr Trp Glu His Leu Ser Ile Arg Gly Phe Ile Trp Trp Leu
                405                 410                 415
Arg Cys Leu Val Ile Asn Val Val Leu Phe Ile Leu Leu Phe Phe Leu
            420                 425                 430
Thr Thr Pro Ala Ile Ile Ile Thr Thr Met Asp Lys Phe Asn Val Thr
            435                 440                 445
Lys Pro Val Glu Tyr Leu Asn Asn Pro Ile Ile Thr Gln Phe Phe Pro
```

```
     450                      455                      460
Thr Leu Leu Leu Trp Cys Phe Ser Ala Leu Leu Pro Thr Ile Gly Tyr
465                      470                      475                      480
```

<210> 4019
<211> 2408
<212> DNA
<213> Homo sapiens

<400> 4019
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cccgggggaa acgtcaccat cacttaaaga tatgctgggg ccagagcacc catgggccag
60
ggcttcctgc tctcctacag ccaagattgg ctgatgtgcc tacaggaaga gtttcagtgc
120
ctgaaccacc gctgtgtatc tgctgtccag cgctgtgatg gggttgatgc ctgtggcgat
180
ggctctgatg aagcaggttg cagctcagac cccttccctg gcctgacccc aagacccgtc
240
ccctccctgc cttgcaatgt caccttggag gacttctatg gggtcttctc ctctcctgga
300
tatacacacc tagcctcagt ctcccacccc cagtcctgcc attggctgct ggaccccat
360
gatggccggc ggctggccgt gcgcttcaca gccccggact tgggctttgg agatgcagtg
420
catgtgtatg acggccctgg gccccctgag agctcccgac tactgcgtag tctcacccac
480
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3196

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<212> PRT
<213> Homo sapiens


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            115                   120                   125
Arg Arg Gln Arg Gly Arg Leu Met Arg Arg Leu Val Arg Arg Leu Arg
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Arg Trp Gly Leu Leu Pro Arg Thr Asn Thr Pro Ala Arg Ala Ser Glu
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Ala Arg Ser Gln Val Thr Pro Ser Ala Ala Pro Leu Glu Ala Leu Asp
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Gly Gly Thr Gly Pro Ala Arg Glu Gly Gly Ala Val Gly Gly Gln Asp
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Gly Glu Gln Ala Pro Pro Leu Pro Ile Lys Ala Pro Leu Pro Ser Ala
                195                   200                   205
Ser Thr Ser Pro Ala Pro Thr Thr Val Pro Glu Ala Pro Gly Pro Leu
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Pro Ser Leu Pro Leu Glu Pro Ser Leu Leu Ser Gly Val Val Gln Ala
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Leu Arg Gly Arg Leu Leu Pro Ser Leu Gly Pro Pro Gly Pro Thr Arg
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Ser Pro Pro Gly Pro His Thr Ala Val Leu Ala Leu Glu Asp Glu Asp
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<213> Homo sapiens

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Arg Ser Ser Ser Ser Cys Val Pro Arg Leu Phe Ser Leu Thr Leu Lys
            35   40   45
Lys Leu Val Met Leu Lys Glu Met Asp Lys Asp Leu Asn Ser Val Val
        50   55   60
Ile Ala Val Lys Leu Gln Gly Ser Lys Arg Ile Leu Arg Ser Asn Glu
65   70   75   80
Ile Val Leu Pro Ala Ser Gly Leu Val Glu Thr Glu Leu Gln Leu Thr
                85   90   95
Phe Ser Leu Gln Tyr Pro His Phe Leu Lys Arg Asp Ala Asn Lys Leu
            100   105   110
Gln Ile Met Leu Gln Arg Arg Lys Arg Tyr Lys Asn Arg Thr Ile Leu
        115   120   125
Gly Tyr Lys Thr Leu Ala Val Gly Leu Ile Asn Met Ala Glu Val Met
    130   135   140
Gln His Pro Asn Glu Gly Ala Leu Val Leu Gly Leu His Ser Asn Val
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Lys Asp Val Ser Val Pro Val Ala Glu Ile Lys Ile Tyr Ser Leu Ser
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Ser Gln Pro Ile Asp His Glu Gly Ile Lys Ser Lys Leu Ser Asp Arg
            180   185   190
Ser Pro Asp Ile Asp Asn Tyr Ser Glu Glu Glu Glu Ser Phe Ser
            195   200   205
Ser Glu Gln Glu Gly Ser Asp Asp Pro Leu His Gly Gln Asp Leu Phe
    210   215   220
Tyr Glu Asp Glu Asp Leu Arg Lys Val Lys Lys Thr Arg Arg Lys Leu
225   230   235   240
Thr Ser Thr Ser Ala Ile Thr Arg Gln Pro Asn Ile Lys Gln Lys Phe

3201

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Asp Glu Leu Tyr Asp Ser Leu Glu Met Tyr Asn Pro Ser Asp Ser Gly
        290                     295                     300
Pro Glu Met Glu Glu Thr Glu Ser Ile Leu Ser Thr Pro Lys Pro Lys
305                     310                     315                     320
Leu Lys Pro Phe Phe Glu Gly Met Ser Gln Ser Ser Ser Gln Thr Glu
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Ile Gly Ser Leu Asn Ser Lys Gly Ser Leu Gly Lys Asp Thr Thr Ser
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Pro Met Glu Leu Ala Ala Leu Glu Lys Ile Lys Ser Thr Trp Ile Lys
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Gln Asp Met Phe Gly Asp Ala Ser Thr Ser Leu Val Val Pro Glu Lys
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Ser Pro Ser Lys Val Glu Gly Val His Thr Pro Arg Gln Lys Arg Ser
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Thr Pro Leu Lys Glu Arg Gln Leu Ser Lys Pro Leu Ser Glu Arg Thr
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Asn Ser Ser Asp Ser Glu Arg Ser Pro Asp Leu Gly His Ser Thr Gln
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Gln Gly Gln Tyr Val Ala Glu Leu Leu Gln Asp Gln Arg Lys Pro Val
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Leu Thr Arg Ile Gln Arg Tyr Cys Asn Cys Asn Ser Ser Met Pro Arg
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Pro Val Lys Val Ala Ala Val Gly Gly Gln Ser Tyr Leu Ser Ser Ile
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Leu Arg Phe Phe Val Lys Ser Leu Ala Asn Lys Thr Ser Asp Trp Leu
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Gly Tyr Met Arg Phe Leu Ile Ile Pro Leu Gly Ser His Pro Val Ala
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Lys Tyr Leu Gly Ser Val Asp Ser Lys Tyr Ser Ser Ser Phe Leu Asp
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Ser Gly Trp Arg Asp Leu Phe Ser Arg Ser Glu Pro Pro Val Ser Glu
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Gln Leu Asp Val Ala Gly Arg Val Met Gln Tyr Val Asn Gly Ala Ala
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Thr Thr His Gln Leu Pro Val Ala Glu Ala Met Leu Thr Cys Arg His
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Lys Phe Pro Asp Glu Asp Ser Tyr Gln Lys Phe Ile Pro Phe Ile Gly
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Val Val Lys Val Gly Leu Val Glu Asp Ser Pro Ser Thr Ala Gly Asp
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Pro Ser Ser Ser Gly Leu Ser Arg Asp Ala Thr Ala Thr Pro Pro Ser
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Ser Pro Ser Met Ser Ser Ala Leu Ala Ile Val Gly Ser Pro Asn Ser
                725                     730                     735
Pro Tyr Gly Asp Val Ile Gly Leu Gln Val Asp Tyr Trp Leu Gly His
            740                     745                     750
Pro Gly Glu Arg Arg Arg Glu Gly Asp Lys Arg Asp Ala Ser Ser Lys
            755                     760                     765
Asn Thr Leu Lys Ser Val Phe Arg Ser Val Gln Val Ser Arg Leu Pro
    770                     775                     780
His Ser Gly Glu Ala Gln Leu Ser Gly Thr Met Ala Met Thr Val Val
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Thr Lys Glu Lys Asn Lys Lys Val Pro Thr Ile Phe Leu Ser Lys Lys
                805                     810                     815
Pro Arg Glu Lys Glu Val Asp Ser Lys Ser Gln Val Ile Glu Gly Ile
            820                     825                     830
Ser Arg Leu Ile Cys Ser Ala Lys Gln Gln Gln Thr Met Leu Arg Val
            835                     840                     845
Ser Ile Asp Gly Val Glu Trp Ser Asp Ile Lys Phe Phe Gln Leu Ala
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3660
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3720
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3780
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3840
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4020
gactcgctgg tgggtgtgga tgtgatagct gctttggacc tgtatgtgga gcagggccag
4080
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5160
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaa
5193
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<210> 4024
<211> 1690
<212> PRT
<213> Homo sapiens

<400> 4024
Xaa Arg Val Lys Gly Met Ala Phe Ser Pro Asp Ser Thr Lys Ile Ala
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3206

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     1                    5                      10                      15
Ile Gly Gln Thr Asp Asn Ile Ile Tyr Val Tyr Lys Ile Gly Glu Asp
                20                      25                      30
Trp Gly Asp Lys Lys Val Ile Cys Asn Lys Phe Ile Gln Thr Ser Ala
            35                      40                      45
Val Thr Cys Leu Gln Trp Pro Ala Glu Tyr Ile Ile Val Phe Gly Leu
        50                      55                      60
Ala Glu Gly Lys Val Arg Leu Ala Asn Thr Lys Thr Asn Lys Ser Ser
65                      70                      75                      80
Thr Ile Tyr Gly Thr Glu Ser Tyr Val Val Ser Leu Thr Thr Asn Cys
                85                      90                      95
Ser Gly Lys Gly Ile Leu Ser Gly His Ala Asp Gly Thr Ile Val Arg
            100                     105                     110
Tyr Phe Phe Asp Asp Glu Gly Ser Gly Glu Ser Gln Gly Lys Leu Val
        115                     120                     125
Asn His Pro Cys Pro Pro Tyr Ala Leu Ala Trp Ala Thr Asn Ser Ile
    130                     135                     140
Val Ala Ala Gly Cys Asp Arg Lys Ile Val Ala Tyr Gly Lys Glu Gly
145                     150                     155                     160
His Met Leu Gln Thr Phe Asp Tyr Ser Arg Asp Pro Gln Glu Arg Glu
                165                     170                     175
Phe Thr Thr Ala Val Ser Ser Pro Gly Gly Gln Ser Val Val Leu Gly
            180                     185                     190
Ser Tyr Asp Arg Leu Arg Val Phe Asn Trp Ile Pro Arg Arg Ser Ile
        195                     200                     205
Trp Glu Glu Ala Lys Pro Lys Glu Ile Thr Asn Leu Tyr Thr Ile Thr
    210                     215                     220
Ala Leu Ala Trp Lys Arg Asp Gly Ser Arg Leu Cys Val Gly Thr Leu
225                     230                     235                     240
Cys Gly Gly Val Glu Gln Phe Asp Cys Cys Leu Arg Arg Ser Ile Tyr
                245                     250                     255
Lys Asn Lys Phe Glu Leu Thr Tyr Val Gly Pro Ser Gln Val Ile Val
            260                     265                     270
Lys Asn Leu Ser Ser Gly Thr Arg Val Val Leu Lys Ser His Tyr Gly
            275                     280                     285
Tyr Glu Val Glu Glu Val Lys Ile Leu Gly Lys Glu Arg Tyr Leu Val
        290                     295                     300
Ala His Thr Ser Glu Thr Leu Leu Leu Gly Asp Leu Asn Thr Asn Arg
305                     310                     315                     320
Leu Ser Glu Ile Ala Trp Gln Gly Ser Gly Gly Asn Glu Lys Tyr Phe
            325                     330                     335
Phe Glu Asn Glu Asn Val Cys Met Ile Phe Asn Ala Gly Glu Leu Thr
            340                     345                     350
Leu Val Glu Tyr Gly Asn Asn Asp Thr Leu Gly Ser Val Arg Thr Glu
        355                     360                     365
Phe Met Asn Pro His Leu Ile Ser Val Arg Ile Asn Glu Arg Cys Gln
370                     375                     380
Arg Gly Thr Glu Asp Asn Lys Lys Leu Ala Tyr Leu Ile Asp Ile Lys
385                     390                     395                     400
Thr Ile Ala Ile Val Asp Leu Ile Gly Gly Tyr Asn Ile Gly Thr Val
                405                     410                     415
Ser His Glu Ser Arg Val Asp Trp Leu Glu Leu Asn Glu Thr Gly His
            420                     425                     430
Lys Leu Leu Phe Arg Asp Arg Lys Leu Arg Leu His Leu Tyr Asp Ile
```

```
               435                    440                    445
Glu Ser Cys Ser Lys Thr Met Ile Leu Asn Phe Cys Ser Tyr Met Gln
    450                    455                    460
Trp Val Pro Gly Ser Asp Val Leu Val Ala Gln Asn Arg Asn Ser Leu
465                    470                    475                    480
Cys Val Trp Tyr Asn Ile Glu Ala Pro Glu Arg Val Thr Met Phe Thr
                   485                    490                    495
Ile Arg Gly Asp Val Ile Gly Leu Glu Arg Gly Gly Gly Lys Thr Glu
                   500                    505                    510
Val Met Val Met Glu Gly Val Thr Thr Val Ala Tyr Thr Leu Asp Glu
                   515                    520                    525
Gly Leu Ile Glu Phe Gly Thr Ala Ile Asp Asp Gly Asn Tyr Ile Arg
    530                    535                    540
Ala Thr Ala Phe Leu Glu Thr Leu Glu Met Thr Pro Glu Thr Glu Ala
545                    550                    555                    560
Met Trp Lys Thr Leu Ser Lys Leu Ala Leu Glu Ala Arg Gln Leu His
                   565                    570                    575
Ile Ala Glu Arg Cys Phe Ser Ala Leu Gly Gln Val Ala Lys Ala Arg
                   580                    585                    590
Phe Leu His Glu Thr Asn Glu Ile Ala Asp Gln Val Ser Arg Glu Tyr
                   595                    600                    605
Gly Gly Glu Gly Thr Asp Phe Tyr Gln Val Arg Ala Arg Leu Ala Met
    610                    615                    620
Leu Glu Lys Asn Tyr Lys Leu Ala Glu Met Ile Phe Leu Glu Gln Asn
625                    630                    635                    640
Ala Val Glu Glu Ala Met Gly Met Tyr Gln Glu Leu His Arg Trp Asp
                   645                    650                    655
Glu Cys Ile Ala Val Ala Glu Ala Lys Gly His Pro Ala Leu Glu Lys
                   660                    665                    670
Leu Arg Arg Ser Tyr Tyr Gln Trp Leu Met Asp Thr Gln Gln Glu Glu
                   675                    680                    685
Arg Ala Gly Glu Leu Gln Glu Ser Gln Gly Asp Gly Leu Ala Ala Ile
    690                    695                    700
Ser Leu Tyr Leu Lys Ala Gly Leu Pro Ala Lys Ala Ala Arg Leu Val
705                    710                    715                    720
Leu Thr Arg Glu Glu Leu Leu Ala Asn Thr Glu Leu Val Glu His Ile
                   725                    730                    735
Thr Ala Ala Leu Ile Lys Gly Glu Leu Tyr Glu Arg Ala Gly Asp Leu
                   740                    745                    750
Phe Glu Lys Ile His Asn Pro Gln Lys Ala Leu Glu Cys Tyr Arg Lys
                   755                    760                    765
Gly Asn Ala Phe Met Lys Ala Val Glu Leu Ala Arg Leu Ala Phe Pro
    770                    775                    780
Val Glu Val Val Lys Leu Glu Glu Ala Trp Gly Asp His Leu Val Gln
785                    790                    795                    800
Gln Lys Gln Leu Asp Ala Ala Ile Asn His Tyr Ile Glu Ala Arg Cys
                   805                    810                    815
Ser Ile Lys Ala Ile Glu Ala Ala Leu Gly Ala Arg Gln Trp Lys Lys
                   820                    825                    830
Ala Ile Tyr Ile Leu Asp Leu Gln Asp Arg Asn Thr Ala Ser Lys Tyr
                   835                    840                    845
Tyr Pro Leu Val Ala Gln His Tyr Ala Ser Leu Gln Glu Tyr Glu Ile
    850                    855                    860
Ala Glu Glu Leu Tyr Thr Lys Gly Asp Arg Thr Lys Asp Ala Ile Asp
```

```
865                   870                   875                   880
Met Tyr Thr Gln Ala Gly Arg Trp Glu Gln Ala His Lys Leu Ala Met
            885                   890                   895
Lys Cys Met Arg Pro Glu Asp Val Ser Val Leu Tyr Ile Thr Gln Ala
            900                   905                   910
Gln Glu Met Glu Lys Gln Gly Lys Tyr Arg Glu Ala Glu Arg Leu Tyr
        915                   920                   925
Val Thr Val Gln Glu Pro Asp Leu Ala Ile Thr Met Tyr Lys Lys His
    930                   935                   940
Lys Leu Tyr Asp Asp Met Ile Arg Leu Val Gly Lys His His Pro Asp
945                   950                   955                   960
Leu Leu Ser Asp Thr His Leu His Leu Gly Lys Glu Leu Glu Ala Glu
            965                   970                   975
Gly Arg Leu Gln Glu Ala Glu Tyr His Tyr Leu Glu Ala Gln Glu Trp
        980                   985                   990
Lys Ala Thr Val Asn Met Tyr Arg Ala Ser Gly Leu Trp Glu Glu Ala
        995                   1000                  1005
Tyr Arg Val Ala Arg Thr Gln Gly Gly Ala Asn Ala His Lys His Val
    1010                  1015                  1020
Ala Tyr Leu Trp Ala Lys Ser Leu Gly Gly Glu Ala Ala Val Arg Leu
1025                  1030                  1035                  1040
Leu Asn Lys Leu Gly Leu Leu Glu Ala Ala Val Asp His Ala Ala Asp
            1045                  1050                  1055
Asn Cys Ser Phe Glu Phe Ala Phe Glu Leu Ser Arg Leu Ala Leu Lys
            1060                  1065                  1070
His Lys Thr Pro Glu Val His Leu Lys Tyr Ala Met Phe Leu Glu Asp
        1075                  1080                  1085
Glu Gly Lys Phe Glu Glu Ala Glu Ala Glu Phe Ile Arg Ala Gly Lys
    1090                  1095                  1100
Pro Lys Glu Ala Val Leu Met Phe Val His Asn Gln Asp Trp Glu Ala
1105                  1110                  1115                  1120
Ala Gln Arg Val Ala Glu Ala His Asp Pro Asp Ser Val Ala Glu Val
            1125                  1130                  1135
Leu Val Gly Gln Ala Arg Gly Ala Leu Glu Glu Lys Asp Phe Gln Lys
        1140                  1145                  1150
Ala Glu Gly Leu Leu Leu Arg Ala Gln Arg Pro Gly Leu Ala Leu Asn
        1155                  1160                  1165
Tyr Tyr Lys Glu Ala Gly Leu Trp Ser Asp Ala Leu Arg Ile Cys Lys
    1170                  1175                  1180
Asp Tyr Val Pro Ser Gln Leu Glu Ala Leu Gln Glu Glu Tyr Glu Arg
1185                  1190                  1195                  1200
Glu Ala Thr Lys Lys Gly Ala Arg Gly Val Glu Gly Phe Val Glu Gln
            1205                  1210                  1215
Ala Arg His Trp Glu Gln Ala Gly Glu Tyr Ser Arg Ala Val Asp Cys
            1220                  1225                  1230
Tyr Leu Lys Val Arg Asp Ser Gly Asn Ser Gly Leu Ala Glu Lys Cys
        1235                  1240                  1245
Trp Met Lys Ala Ala Glu Leu Ser Ile Lys Phe Leu Pro Pro Gln Arg
    1250                  1255                  1260
Asn Met Glu Val Val Leu Ala Val Gly Pro Gln Leu Ile Gly Ile Gly
1265                  1270                  1275                  1280
Lys His Ser Ala Ala Ala Glu Leu Tyr Leu Asn Leu Asp Leu Val Lys
            1285                  1290                  1295
Glu Ala Ile Asp Ala Phe Ile Glu Gly Glu Glu Trp Asn Lys Ala Lys
```

```
                  1300                    1305                    1310
Arg Val Ala Lys Glu Leu Asp Pro Arg Tyr Glu Asp Tyr Val Asp Gln
           1315                    1320                    1325
His Tyr Lys Glu Phe Leu Lys Asn Gln Gly Lys Val Asp Ser Leu Val
           1330                    1335                    1340
Gly Val Asp Val Ile Ala Ala Leu Asp Leu Tyr Val Glu Gln Gly Gln
1345                    1350                    1355                    1360
Trp Asp Lys Cys Ile Glu Thr Ala Thr Lys Gln Asn Tyr Lys Ile Leu
                  1365                    1370                    1375
His Lys Tyr Val Ala Leu Tyr Ala Thr His Leu Ile Arg Glu Gly Ser
           1380                    1385                    1390
Ser Ala Gln Ala Leu Ala Leu Tyr Val Gln His Gly Ala Pro Ala Asn
           1395                    1400                    1405
Pro Gln Asn Phe Asn Ile Tyr Lys Arg Ile Phe Thr Asp Met Val Ser
           1410                    1415                    1420
Ser Pro Gly Thr Asn Cys Ala Glu Ala Tyr His Ser Trp Ala Asp Leu
1425                    1430                    1435                    1440
Arg Asp Val Leu Phe Asn Leu Ala Val Leu Ser Pro Ser Ser Ser Val
                  1445                    1450                    1455
Lys Thr Trp Lys Ser Ser Glu Ala Asn Ser Pro Ala His Glu Glu Phe
           1460                    1465                    1470
Lys Thr Met Leu Leu Ile Ala His Tyr Tyr Ala Thr Arg Ser Ala Ala
           1475                    1480                    1485
Gln Ser Val Lys Gln Leu Glu Thr Val Ala Ala Arg Leu Ser Val Ser
           1490                    1495                    1500
Leu Leu Arg His Thr Gln Leu Leu Pro Val Asp Lys Ala Phe Tyr Glu
1505                    1510                    1515                    1520
Ala Gly Ile Ala Ala Lys Ala Val Gly Trp Asp Asn Met Ala Phe Ile
                  1525                    1530                    1535
Phe Leu Asn Arg Phe Leu Asp Leu Thr Asp Ala Ile Glu Glu Gly Thr
           1540                    1545                    1550
Leu Asp Gly Leu Asp His Ser Asp Phe Gln Asp Thr Asp Ile Pro Phe
           1555                    1560                    1565
Glu Val Pro Leu Pro Ala Lys Gln His Val Pro Glu Ala Glu Arg Glu
           1570                    1575                    1580
Glu Val Arg Asp Trp Val Leu Thr Val Ser Met Asp Gln Arg Leu Glu
1585                    1590                    1595                    1600
Gln Val Leu Pro Arg Asp Glu Arg Gly Ala Tyr Glu Ala Ser Leu Val
                  1605                    1610                    1615
Ala Ala Ser Thr Gly Val Arg Ala Leu Pro Cys Leu Ile Thr Gly Tyr
           1620                    1625                    1630
Pro Ile Leu Arg Asn Lys Ile Glu Phe Lys Arg Pro Gly Lys Ala Ala
           1635                    1640                    1645
Asn Lys Asp Asn Trp Asn Lys Phe Leu Met Ala Ile Lys Thr Ser His
           1650                    1655                    1660
Ser Pro Val Cys Gln Asp Val Leu Lys Phe Ile Ser Gln Trp Cys Gly
1665                    1670                    1675                    1680
Gly Leu Pro Ser Thr Ser Phe Ser Phe Gln
                  1685                    1690
```

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<210> 4025
<211> 908
<212> DNA
<213> Homo sapiens
```

<400> 4025
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gatccctcat cccttagact gcatttgaga attcacactg gagaaaaacc ctatgaatgt
120
aaccagtgtt ttcacgtttt ccgcaccagt tgtaacctta aaagccacaa gaggattcac
180
acgggggaga atcaccatga atgtaatcag tgtggaaaag ctttcagcac aaggtcctct
240
ctcactgggc acaattgcat tcatacaggg gagaaacctt atgaatgtaa ggaatgtggg
300
aaaaccttta tgtataattc atcccttatt caacatctga gaactcatac tggagagaaa
360
ccctatgaat gtaaggagtg tgggaaagcc tttaggcaac attcacacct tgtcacacac
420
cagaaaatcc atactggaga gaagccctat cagtgcactg aatgtgggaa agccttcagg
480
cggcgttcac tccttattca acatcggaga attcatagtg gtgagaagcc ctatgaatgt
540
aaggaatgtg ggaagctctt catttggcgc acagctttcc tcaaacatca gagcctgcat
600
gctggagaga aacttgaaga atgtgagaaa nnaccttcag caaggatgag gagcttaggg
660
gagnagcaga aaattcacca agaagagaaa gcttattggt gtaatcagtg tggtagggct
720
ttccagggca gctcagacct catcggacat caggtaactc atacaggaga gaaaccatat
780
gaatgtaaag aatgtggana actttcaat cagagctcag accttctgag acatcataga
840
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900
tcagatct
908

<210> 4026
<211> 302
<212> PRT
<213> Homo sapiens

<400> 4026
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Leu Arg Thr His Thr Gly Xaa Lys Pro Tyr Glu Cys Asn His Cys Gly
 1               5                  10                  15
Lys Ala Phe Ser Asp Pro Ser Ser Leu Arg Leu His Leu Arg Ile His
              20                  25                  30
Thr Gly Glu Lys Pro Tyr Glu Cys Asn Gln Cys Phe His Val Phe Arg
          35                  40                  45
Thr Ser Cys Asn Leu Lys Ser His Lys Arg Ile His Thr Gly Glu Asn
       50                  55                  60
His His Glu Cys Asn Gln Cys Gly Lys Ala Phe Ser Thr Arg Ser Ser
65                  70                  75                  80
Leu Thr Gly His Asn Cys Ile His Thr Gly Glu Lys Pro Tyr Glu Cys
              85                  90                  95
Lys Glu Cys Gly Lys Thr Phe Met Tyr Asn Ser Ser Leu Ile Gln His
```

```
                100                    105                    110
Leu Arg Thr His Thr Gly Glu Lys Pro Tyr Glu Cys Lys Glu Cys Gly
        115                    120                    125
Lys Ala Phe Arg Gln His Ser His Leu Val Thr His Gln Lys Ile His
    130                    135                    140
Thr Gly Glu Lys Pro Tyr Gln Cys Thr Glu Cys Gly Lys Ala Phe Arg
145                    150                    155                    160
Arg Arg Ser Leu Leu Ile Gln His Arg Arg Ile His Ser Gly Glu Lys
                165                    170                    175
Pro Tyr Glu Cys Lys Glu Cys Gly Lys Leu Phe Ile Trp Arg Thr Ala
                180                    185                    190
Phe Leu Lys His Gln Ser Leu His Ala Gly Glu Lys Leu Glu Glu Cys
        195                    200                    205
Glu Lys Xaa Pro Ser Ala Arg Met Arg Ser Leu Gly Glu Xaa Gln Lys
        210                    215                    220
Ile His Gln Glu Glu Lys Ala Tyr Trp Cys Asn Gln Cys Gly Arg Ala
225                    230                    235                    240
Phe Gln Gly Ser Ser Asp Leu Ile Gly His Gln Val Thr His Thr Gly
                245                    250                    255
Glu Lys Pro Tyr Glu Cys Lys Glu Cys Gly Xaa Thr Phe Asn Gln Ser
                260                    265                    270
Ser Asp Leu Leu Arg His His Arg Ile His Ser Gly Glu Lys Pro Tyr
        275                    280                    285
Val Cys Asn Lys Cys Gly Lys Ser Phe Arg Gly Ser Ser Asp
    290                    295                    300
```

```
<210> 4027
<211> 941
<212> DNA
<213> Homo sapiens

<400> 4027
gcgcgccagg gaacctatat ctgtgaaatc cgcctcaaag gggagagcca ggtgttcaag
60
aaggcggtgg tactgcatgt gcttccagag gagcccaaag agctcatggt ccatgtgggt
120
ggattgattc agatgggatg tgttttccag agcacagaag tgaaacacgt gaccaaggta
180
gaatggatat tttcaggacg gcgcgcaaag gaggagattg tatttcgtta ctaccacaaa
240
ctcaggatgt ctgcggagta ctcccagagc tggggccact tccagaatcg tgtgaacctg
300
gtgggggaca ttttccgcaa tgacggttcc atcatgcttc aaggagtgag ggagtcagat
360
ggaggaaact acacctgcag tatccaccta gggaacctgg tgttcaagaa aaccattgtg
420
ctgcatgtca gcccggaaga gcctcgaaca ctggtgaccc cggcagccct gaggcctctg
480
gtcttgggtg gtaatcagtt ggtgatcatt gtgggaattg tctgtgccac aatcctgctg
540
ctccctgttc tgatattgat cgtgaagaag acctgtggaa ataagagttc agtgaattct
600
acagtcttgg tgaagaacac gaagaagact aatccagaga tgaaagaaaa accctgccat
660
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tttgaaagat gtgaagggga ggtgaacaca cgcttcagcc taaaacacta agtagatgca
720
ggcctgggcc gttctcatac ccccgggaac catatcttac ccattgtatg tcgcagcttg
780
caggccagtg cttggcacag agcagggact caggaagcct ttgtcactaa agtaagagcc
840
tctgcggagt acagtgcatg gggtcggctg ggacacccc aggcagcaga tcctggtatt
900
gggctgagga aagagcactg cgcttggagt cagtaagatc t
941
```

<210> 4028
<211> 236
<212> PRT
<213> Homo sapiens

<400> 4028
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Ala Arg Gln Gly Thr Tyr Ile Cys Glu Ile Arg Leu Lys Gly Glu Ser
 1               5                  10                  15
Gln Val Phe Lys Lys Ala Val Val Leu His Val Leu Pro Glu Glu Pro
            20                  25                  30
Lys Glu Leu Met Val His Val Gly Gly Leu Ile Gln Met Gly Cys Val
            35                  40                  45
Phe Gln Ser Thr Glu Val Lys His Val Thr Lys Val Glu Trp Ile Phe
    50                  55                  60
Ser Gly Arg Arg Ala Lys Glu Glu Ile Val Phe Arg Tyr Tyr His Lys
65                  70                  75                  80
Leu Arg Met Ser Ala Glu Tyr Ser Gln Ser Trp Gly His Phe Gln Asn
                85                  90                  95
Arg Val Asn Leu Val Gly Asp Ile Phe Arg Asn Asp Gly Ser Ile Met
                100                 105                 110
Leu Gln Gly Val Arg Glu Ser Asp Gly Gly Asn Tyr Thr Cys Ser Ile
            115                 120                 125
His Leu Gly Asn Leu Val Phe Lys Lys Thr Ile Val Leu His Val Ser
    130                 135                 140
Pro Glu Glu Pro Arg Thr Leu Val Thr Pro Ala Ala Leu Arg Pro Leu
145                 150                 155                 160
Val Leu Gly Gly Asn Gln Leu Val Ile Ile Val Gly Ile Val Cys Ala
                165                 170                 175
Thr Ile Leu Leu Leu Pro Val Leu Ile Leu Ile Val Lys Lys Thr Cys
                180                 185                 190
Gly Asn Lys Ser Ser Val Asn Ser Thr Val Leu Val Lys Asn Thr Lys
            195                 200                 205
Lys Thr Asn Pro Glu Met Lys Glu Lys Pro Cys His Phe Glu Arg Cys
    210                 215                 220
Glu Gly Glu Val Asn Thr Arg Phe Ser Leu Lys His
225                 230                 235
```

<210> 4029
<211> 909
<212> DNA
<213> Homo sapiens

<400> 4029

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cggccgcctg ttttgggtgg cgctggacct gctggacctg ctggacatgc aggccagcct
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gtgggagccg ccgcgctccg ggctgccgct gtgggccgag ggcctcacct tcttctactg
120
ctacatgctg ctgctggtgc tgccgtgcgt ggcgctcagc gaggtcagca tgcagggcga
180
gcacatagcg ccgcagaaga tgatgctgta cccggtgctc agtctcgcca ccgtcaatgt
240
ggtgggccgt gctggcgcgc gccgccaaca tggcgctgtt ccgggacagc cgtgtctcgg
300
ccatcttcgt cggcaaaaac gtggtggcgc tcgccaccaa ggcctgcacc tnntcctgga
360
gtaccgccgc caggtgcgcg acttcccnng ccgcctgcgc tatcactgga gctgcagccg
420
ccaccccgc agcgcaactc ggtgccgccg ccgccgccgc cgctgcacgg cccgcctggg
480
ncgcccccac atgtcctcgc ccacgcgtga cccctggac acgtgacagg gcccgcgcgg
540
cccccgacac gcccctgggg cgcagagaca ccgggttggc ttggggcgcg cggtttgcat
600
gggatggggt ggggggcgggc tccctaggg acaggtgcct cgagtgcccg tgcctggggt
660
cccgcggccg cttcttcatc tcaggaatct ctcggaccgc ggatcctcag cccccgctcc
720
accagcccgc cccagcgcgt gggtctgttt gggaggcctg ggccggagca gagcagaggt
780
gatccggccc ctgcctgctg ggccgcccgg gttggaaggg agggcagtgt gggcggagat
840
ctgctccttc ggtgggggcc tctggctcag atttggggcc aaggaggcct ctgtcatttt
900
aaagactcg
909


<210> 4030
<211> 169
<212> PRT
<213> Homo sapiens


<400> 4030
Arg Pro Pro Val Leu Gly Gly Ala Gly Pro Ala Gly Pro Ala Gly His
1               5                   10                  15
Ala Gly Gln Pro Val Gly Ala Ala Ala Leu Arg Ala Ala Ala Val Gly
            20                  25                  30
Arg Gly Pro His Leu Leu Leu Leu His Ala Ala Ala Gly Ala Ala
        35                  40                  45
Val Arg Gly Ala Gln Arg Gly Gln His Ala Gly Arg Ala His Ser Ala
    50                  55                  60
Ala Glu Asp Asp Ala Val Pro Gly Ala Gln Ser Arg His Arg Gln Cys
65                  70                  75                  80
Gly Gly Pro Cys Trp Arg Ala Pro Thr Trp Arg Cys Ser Gly Thr
                85                  90                  95
Ala Val Ser Arg Pro Ser Ser Ser Ala Lys Thr Trp Trp Arg Ser Pro
                100                 105                 110
Pro Arg Pro Ala Pro Xaa Pro Gly Val Pro Pro Pro Gly Ala Arg Leu
```

3214

```
            115                      120                      125
Pro Xaa Pro Pro Ala Leu Ser Leu Glu Leu Gln Pro Pro Pro Gln
        130                      135                      140
Arg Asn Ser Val Pro Pro Pro Pro Pro Pro Leu His Gly Pro Pro Gly
145                          150                      155                      160
Xaa Pro Pro His Val Leu Ala His Ala
                    165
```

<210> 4031
<211> 1406
<212> DNA
<213> Homo sapiens

<400> 4031
naagctgaga acgcatcttt agctaaactt cgcattgaac gagaaagtgc cttggaaaaa
60
ctcaggaaag aaattgcagg cttcgaacaa cagaaagcaa aagaattagc tcgaatagaa
120
gagtttaaaa aggaggagat gaggaagcta caaaaggaac gtaaagtttt tgaaaagtat
180
actacagctg caagaacttt tccagataaa aaggaacgtg aagaaataca gactttaaaa
240
cagcaaatag cagatttacg ggaagatttg aaaagaaagg agaccaaatg gtcaagtaca
300
cacagccgtc tcagaagcca gatacaaatg ttagtcagag agaacacaga cctccgggaa
360
gaaataaaag tgatggaaag attccgactg gatgcctgga agagagcaga agccatagag
420
agcagcctcg aggtggagaa gaaggacaag cttgcgaaca catctgttcg atttcaaaac
480
agtcagattt cttcaggaac ccaggtagaa aaatacaaga aaaattatct tccaatgcaa
540
ggcaatccac ctcgaagatc caagtctgca cctcctcgtg atttaggcaa tttggataag
600
ggacaggctg cctctcccag ggagccactt gaaccactga acttcccaga tcctgaatat
660
aaagaggagg aggaagacca agacatacag ggagaaatca gtcatcctga tggaaaggtg
720
gaaaaggttt ataagaatgg gtgccgtgtt atactgtttc ccaatggaac tcgaaaggaa
780
gtgagtgcag atgggaagac catcactgtc actttcttta atggtgacgt gaagcaggtc
840
atgccagacc aaagagtgat ctactactat gcagctgccc agaccactca cacgacatac
900
ccggagggac tggaagtctt acatttctca agtggacaaa tagaaaaaca ttacccagat
960
ggaagaaaag aaatcacgtt tcctgaccag actgttaaaa acttatttcc tgatggacaa
1020
gaagaaagca tttttcccaga tggtacaatt gtcagagtac aacgtgatgg caacaaactc
1080
atagagttta ataatggcca aagagaacta catactgccc agttcaagag acgggaatac
1140
ccagatggca ctgttaaaac cgtatatgca aacggtcatc aagaaacgaa gtacagatcc
1200
```

ggtcggataa gagttaagga caaggagggt aatgtgctaa tggacacgga gctgtgacga
1260
tcctcatgtg atcatgaagt aacagtaact gactttttat gttaaaaaat gtacatttac
1320
tgtggattct gtttaattta ttgtgtatgt gtggggaaaa gattggattc taaaataaaa
1380
gtttaccctg tggcaaaaaa aaaaaa
1406


<210> 4032
<211> 418
<212> PRT
<213> Homo sapiens

<400> 4032
Xaa Ala Glu Asn Ala Ser Leu Ala Lys Leu Arg Ile Glu Arg Glu Ser
1               5                   10                  15
Ala Leu Glu Lys Leu Arg Lys Glu Ile Ala Gly Phe Glu Gln Gln Lys
            20                  25                  30
Ala Lys Glu Leu Ala Arg Ile Glu Glu Phe Lys Lys Glu Glu Met Arg
        35                  40                  45
Lys Leu Gln Lys Glu Arg Lys Val Phe Glu Lys Tyr Thr Thr Ala Ala
    50                  55                  60
Arg Thr Phe Pro Asp Lys Lys Glu Arg Glu Glu Ile Gln Thr Leu Lys
65                  70                  75                  80
Gln Gln Ile Ala Asp Leu Arg Glu Asp Leu Lys Arg Lys Glu Thr Lys
                85                  90                  95
Trp Ser Ser Thr His Ser Arg Leu Arg Ser Gln Ile Gln Met Leu Val
            100                 105                 110
Arg Glu Asn Thr Asp Leu Arg Glu Glu Ile Lys Val Met Glu Arg Phe
        115                 120                 125
Arg Leu Asp Ala Trp Lys Arg Ala Glu Ala Ile Glu Ser Ser Leu Glu
    130                 135                 140
Val Glu Lys Lys Asp Lys Leu Ala Asn Thr Ser Val Arg Phe Gln Asn
145                 150                 155                 160
Ser Gln Ile Ser Ser Gly Thr Gln Val Glu Lys Tyr Lys Lys Asn Tyr
                165                 170                 175
Leu Pro Met Gln Gly Asn Pro Pro Arg Arg Ser Lys Ser Ala Pro Pro
            180                 185                 190
Arg Asp Leu Gly Asn Leu Asp Lys Gly Gln Ala Ala Ser Pro Arg Glu
        195                 200                 205
Pro Leu Glu Pro Leu Asn Phe Pro Asp Pro Glu Tyr Lys Glu Glu Glu
    210                 215                 220
Glu Asp Gln Asp Ile Gln Gly Glu Ile Ser His Pro Asp Gly Lys Val
225                 230                 235                 240
Glu Lys Val Tyr Lys Asn Gly Cys Arg Val Ile Leu Phe Pro Asn Gly
                245                 250                 255
Thr Arg Lys Glu Val Ser Ala Asp Gly Lys Thr Ile Thr Val Thr Phe
            260                 265                 270
Phe Asn Gly Asp Val Lys Gln Val Met Pro Asp Gln Arg Val Ile Tyr
        275                 280                 285
Tyr Tyr Ala Ala Ala Gln Thr Thr His Thr Thr Tyr Pro Glu Gly Leu
    290                 295                 300
Glu Val Leu His Phe Ser Ser Gly Gln Ile Glu Lys His Tyr Pro Asp

```
305                      310                      315                      320
Gly Arg Lys Glu Ile Thr Phe Pro Asp Gln Thr Val Lys Asn Leu Phe
                325                      330                      335
Pro Asp Gly Gln Glu Glu Ser Ile Phe Pro Asp Gly Thr Ile Val Arg
                340                      345                      350
Val Gln Arg Asp Gly Asn Lys Leu Ile Glu Phe Asn Asn Gly Gln Arg
            355                      360                      365
Glu Leu His Thr Ala Gln Phe Lys Arg Arg Glu Tyr Pro Asp Gly Thr
        370                      375                      380
Val Lys Thr Val Tyr Ala Asn Gly His Gln Glu Thr Lys Tyr Arg Ser
385                      390                      395                      400
Gly Arg Ile Arg Val Lys Asp Lys Glu Gly Asn Val Leu Met Asp Thr
                405                      410                      415
Glu Leu
```

```
<210> 4033
<211> 487
<212> DNA
<213> Homo sapiens

<400> 4033
acgcgtgaag ggacaacttc gcagagttcg gctactgctg acgcgcaggg agtaagcctc
60
gggttttgat gggatagcag acaggtggat tgcagagctc cggaaagacc cagccgggtg
120
tcaagaagag ccctcctagt ttggcctcta actggctgtg cgaccccagg caggtcactt
180
gtcctctctg ggaagcagct gaataatgaa cactgggatt ttcccaggct ggcttctcac
240
tgcagagcag aggaaaagca ttctgggggc ctgctatgga gggtcattta tccagtttac
300
aacttccacg gccggccctc aatggcttcc tttctctccc acaagagcgc tgggccaagc
360
cagctctgca ccagttggac gccttccaag aaaaactcag gctccggggg ctgcttgtca
420
ggaccagacg ggaggcctgg cgcccccgcc cgccatgtgt ggggagcggg cctctccaag
480
ccagtcc
487
```

```
<210> 4034
<211> 94
<212> PRT
<213> Homo sapiens

<400> 4034
Met Asn Thr Gly Ile Phe Pro Gly Trp Leu Leu Thr Ala Glu Gln Arg
1               5                       10                      15
Lys Ser Ile Leu Gly Ala Cys Tyr Gly Gly Ser Phe Ile Gln Phe Thr
            20                      25                      30
Thr Ser Thr Ala Gly Pro Gln Trp Leu Pro Phe Ser Pro Thr Arg Ala
        35                      40                      45
Leu Gly Gln Ala Ser Ser Ala Pro Val Gly Arg Leu Pro Arg Lys Thr
```

```
      50                    55                    60
Gln Ala Pro Gly Ala Ala Cys Gln Asp Gln Thr Gly Gly Leu Ala Pro
65                    70                    75                    80
Pro Pro Ala Met Cys Gly Glu Arg Ala Ser Pro Ser Gln Ser
                  85                    90
```

```
<210> 4035
<211> 343
<212> DNA
<213> Homo sapiens
```

```
<400> 4035
nnncttaata gcagtgttat ggaattccat gtgaggcaca aacattcaga caatcctagc
60
aatgttctgg aatcctatgt gagggacaaa cattcagacc ccagcagcaa tgttctggaa
120
tcctatggga gggacaaact ctcagaaaat agcaagagta ttttggaatc ctatctgagg
180
tataaacact cagaacctca tagcagtgtt caggaatcct atgtgaggga caaacattca
240
gaccacagca ggagcattct agaatcctat ttgaggaaca aacattcaga caatcgtagc
300
agtgttctgg aatccttttt tttttttgaag ctttcaatct ctt
343
```

```
<210> 4036
<211> 114
<212> PRT
<213> Homo sapiens
```

```
<400> 4036
Xaa Leu Asn Ser Ser Val Met Glu Phe His Val Arg His Lys His Ser
 1                    5                    10                    15
Asp Asn Pro Ser Asn Val Leu Glu Ser Tyr Val Arg Asp Lys His Ser
                  20                    25                    30
Asp Pro Ser Ser Asn Val Leu Glu Ser Tyr Gly Arg Asp Lys Leu Ser
            35                    40                    45
Glu Asn Ser Lys Ser Ile Leu Glu Ser Tyr Leu Arg Tyr Lys His Ser
            50                    55                    60
Glu Pro His Ser Ser Val Gln Glu Ser Tyr Val Arg Asp Lys His Ser
65                    70                    75                    80
Asp His Ser Arg Ser Ile Leu Glu Ser Tyr Leu Arg Asn Lys His Ser
                  85                    90                    95
Asp Asn Arg Ser Ser Val Leu Glu Ser Phe Phe Phe Leu Lys Leu Ser
                  100                    105                    110
Ile Ser
```

```
<210> 4037
<211> 741
<212> DNA
<213> Homo sapiens
```

```
<400> 4037
```

```
tttttttttt tttttttttgg aaagagaaaa tatatttact attcattaag tggatgcggg
60
tcatcataaa ggtcttcatt ctcatcctct tcacgttgag taggctgagg aggaggaaga
120
ggaggagaag gggttggtct tgctgtctca gggcggcaga ggcagaagag aatctgagca
180
tacgtggacc tgtagccagg tgggcataga taaaaggaaa tattgtttgc cagtccctgc
240
tggaatgatg cctttacaca tctgtctgat ctgattgctc cactgttttc tgacttctct
300
tccctttcca gggttctagc ctgttcatct agccccatga tggctgtgga catcgagtac
360
agatacaact gcatggctcc ttccttgcgc caagagaggt ttgcctttaa gatctcacca
420
aagcccagca aaccactgag gccttgtatt cagctgagca gcaagaatga agccagtgga
480
atggtggccc cggctgtcca ggagaagaag gtgaaaaagc gggtgtcctt cgcagacaac
540
cagggggctgg ccctgacaat ggtcaaagtg ttctcggaat cgatgaccc gctagatatg
600
ccattcaaca tcaccgagct cctagacaac attgtgagct tgacgacagc agagagcgag
660
agctttgttc tggatttttc ccagccctct gcagattact tagactttag aaatcgactt
720
caggccgacc acgtctgcct t
741
```

```
<210> 4038
<211> 134
<212> PRT
<213> Homo sapiens
```

```
<400> 4038
Met Ala Val Asp Ile Glu Tyr Arg Tyr Asn Cys Met Ala Pro Ser Leu
  1               5                  10                  15
Arg Gln Glu Arg Phe Ala Phe Lys Ile Ser Pro Lys Pro Ser Lys Pro
              20                  25                  30
Leu Arg Pro Cys Ile Gln Leu Ser Ser Lys Asn Glu Ala Ser Gly Met
          35                  40                  45
Val Ala Pro Ala Val Gln Glu Lys Lys Val Lys Lys Arg Val Ser Phe
      50                  55                  60
Ala Asp Asn Gln Gly Leu Ala Leu Thr Met Val Lys Val Phe Ser Glu
65                  70                  75                  80
Phe Asp Asp Pro Leu Asp Met Pro Phe Asn Ile Thr Glu Leu Leu Asp
              85                  90                  95
Asn Ile Val Ser Leu Thr Thr Ala Glu Ser Glu Ser Phe Val Leu Asp
             100                 105                 110
Phe Ser Gln Pro Ser Ala Asp Tyr Leu Asp Phe Arg Asn Arg Leu Gln
         115                 120                 125
Ala Asp His Val Cys Leu
     130
```

```
<210> 4039
<211> 1503
```

```
<212> DNA
<213> Homo sapiens

<400> 4039
gcgagcgccg ggaacgagca ccaccagggc tggagcggac ggctttagaa gagcctagct
60
gctgcgcgcg tcggagaggc tcctggggaa actcccacgg cccagggact ttcgaaagca
120
gagcgaggag ccctcgcacg cgctagtctg cgagtgagcg ctcagcccgg cacctgttcc
180
tccagcgccg ccgccttccc acccctcgga cccgcgccgc tcgcggcgcc cgcccgttcc
240
tgcgatgaat ccggccctag gcaaccagac ggacgtggcg ggccttcctg gccaacagca
300
gcgaggcgct ggagcgagcc gtgcgctgct gcacccaggc gtccgtggtg accgacgacg
360
gcttcgcgga gggaggcccg gacgagcgta gcctgtacat aatgcgcgtg gtgcagatcg
420
cggtcatgtg cgtgctctca ctcaccgtgg tcttcggcat cttcttcctc ggctgcaatc
480
tgctcatcaa gtccgagggc atgatcaact tcctcgtgaa ggaccggagg ccgtctaagg
540
aggtggaggc ggtggtcgtg gggccctact gacccgccct ctgccccgc ggcaaccgct
600
cccacgcctg cccactttgc tagcccggct gtgcccctca ctatcagaga ctgggcgaag
660
caaacctgtc ggagtcaatt atttctctcg acttcggcct ttcggaaaga agcgaccggt
720
ttctccctcg ccctctgaaa gtcctcatgc ctggcagtcg gaggagagcg cccagactct
780
gaactcagca gaaagtggca agaagagggc gattagggcg cagaactttg gaagctgcta
840
cttacttgga atgcggggag accgacggtg cgaaggccct tctccacccg caggtgggcc
900
aagctctggg ggcaggtgga gagggcgggc aggggagaga cccagcggca ctgatcgcct
960
tgtgaccgga agagtgacct gttaaaagcc acgcagcaga ctcatggggt ctcacaaatc
1020
cgtgtccggg tgcgctccca ctcttctcct gctccccccc tgccctgga ggggaggggc
1080
gataaatacc tttgattgta acgtgccgtt ttaagaggtt ttgtgtttgt ttgcttgaat
1140
acaaatgttt gataagtctt tttctgcccc agtggcctgt ttgcctgcct gaggagttac
1200
agttttgtca ttgtggaaga aggggtgggg ggaggggag cctgcgaatt tgaacggggt
1260
gagttgtttc ttttagtgca tttcccactg ggtcttttgg gaggcgtcta gcgttcctgc
1320
tggccctggg acaaagaccc agaatagaac tcgtagctcg tgactgcacg gtttacgcca
1380
caaaagtgct cttgacatcc gtgacaccgt tttgactttt tgtttttttc ttatttaaca
1440
tttccttaat aaatgcaaca tttaagcgtt aaaaaaaaaa aaaaaaaaaa aaaaaaaaa
1500
```

aaa
1503

<210> 4040
<211> 100
<212> PRT
<213> Homo sapiens

<400> 4040
Lys Ser Leu Ala Ala Ala Arg Val Gly Glu Ala Pro Gly Glu Thr Pro
 1   5   10   15
Thr Ala Gln Gly Leu Ser Lys Ala Glu Arg Gly Ala Leu Ala Arg Ala
            20   25   30
Ser Leu Arg Val Ser Ala Gln Pro Gly Thr Cys Ser Ser Ser Ala Ala
            35   40   45
Ala Phe Pro Pro Leu Gly Pro Ala Pro Leu Ala Ala Pro Ala Arg Ser
        50   55   60
Cys Asp Glu Ser Gly Pro Arg Gln Pro Asp Gly Arg Gly Gly Pro Ser
65   70   75   80
Trp Pro Thr Ala Ala Arg Arg Trp Ser Glu Pro Cys Ala Ala Ala Pro
                85   90   95
Arg Arg Pro Trp
            100

<210> 4041
<211> 573
<212> DNA
<213> Homo sapiens

<400> 4041
gatcttattg aggaacgagc catctatttt gatggagact ttggtcagat tgttcgatat
60
ggtgagattc cagctgaatt aagggcggcg gccactgacc accggcagga gctaattgaa
120
tgtgttgcca attcagatga acagcttggt gagatgtttc tggaagaaaa aatcccctcg
180
atttctgatt taaagctagc aattcgaaga gctactctga aaagatcatt tactcctgta
240
tttttgggaa gcgccttgaa gaacaaagga gttcagcctc ttttagatgc tgttttagaa
300
tacctcccaa atccatctga agtccagaac tatgctattc tcaataaaga ggatgactca
360
aaagagaaaa ccaaaatcct aatgaactcc agtagagaca attcccaccc atttgtaggc
420
ctggctttta aactggaggt aggtcgattt ggacaattaa cttatgttcg cagttatcag
480
ggagagctaa agaagggtga caccatctat aacacaagga caagaaagaa agtacggttg
540
caacggctgg ctcgcatgca tgccgacatg atg
573

<210> 4042
<211> 191
<212> PRT

<213> Homo sapiens

<400> 4042
```
Asp Leu Ile Glu Glu Arg Ala Ile Tyr Phe Asp Gly Asp Phe Gly Gln
 1               5                  10                  15
Ile Val Arg Tyr Gly Glu Ile Pro Ala Glu Leu Arg Ala Ala Ala Thr
            20                  25                  30
Asp His Arg Gln Glu Leu Ile Glu Cys Val Ala Asn Ser Asp Glu Gln
        35                  40                  45
Leu Gly Glu Met Phe Leu Glu Glu Lys Ile Pro Ser Ile Ser Asp Leu
    50                  55                  60
Lys Leu Ala Ile Arg Arg Ala Thr Leu Lys Arg Ser Phe Thr Pro Val
65                  70                  75                  80
Phe Leu Gly Ser Ala Leu Lys Asn Lys Gly Val Gln Pro Leu Leu Asp
                85                  90                  95
Ala Val Leu Glu Tyr Leu Pro Asn Pro Ser Glu Val Gln Asn Tyr Ala
            100                 105                 110
Ile Leu Asn Lys Glu Asp Asp Ser Lys Glu Lys Thr Lys Ile Leu Met
        115                 120                 125
Asn Ser Ser Arg Asp Asn Ser His Pro Phe Val Gly Leu Ala Phe Lys
    130                 135                 140
Leu Glu Val Gly Arg Phe Gly Gln Leu Thr Tyr Val Arg Ser Tyr Gln
145                 150                 155                 160
Gly Glu Leu Lys Lys Gly Asp Thr Ile Tyr Asn Thr Arg Thr Arg Lys
                165                 170                 175
Lys Val Arg Leu Gln Arg Leu Ala Arg Met His Ala Asp Met Met
            180                 185                 190
```

<210> 4043
<211> 744
<212> DNA
<213> Homo sapiens

<400> 4043
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nntgcctggc ccagtctctc ccgcctcggc ccaacatgga cttcagagaa attctcatga
60
tagcttccaa gggacaaggt gtcaacaatg tgccgaaaag ggatagttgg ccagtggggc
120
ctcccaaaaa aagacccaaa agttaaaggt gtccaatcag cagctgtaca agcttttctt
180
aaaaggaaag aagaggagct gagacgaaaa gccttagagg agaaaaggag aaaagaggaa
240
ctagtgaaaa agcgaattga gctcaaacat gacaagaaag caagagctat ggccaagagg
300
acaaaggata atttccatgg ttacaatggg attcctattg aggaaaagtc aaagaagagg
360
caggcaacag aaagccatac cagccaagga accgaccgag agtatgaaat ggaagaagag
420
aatgaattcc tcgagtacaa tcacgcagag tcagagcagg agtatgagga agagcaagaa
480
cctcccaaag ttgaaagcaa accaaaggtc tcccttaaag gtgccccacc acccatgaac
540
ttcactgatt tactcaggct ggctgagaaa aagcagtttg aaccagtgga aatcaaggta
600
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gtgaagaaat cagaagagcg acctatgacc gcagaagaac ttagggagcg agaattcctt
660
gaacgaaagc ataggagaaa aaaacttgag acagatggaa aactacctcc aactgtgtcc
720
aaaaaggcac ctctcggacg gaag
744

<210> 4044
<211> 219
<212> PRT
<213> Homo sapiens

<400> 4044
Met Cys Arg Lys Gly Ile Val Gly Gln Trp Gly Leu Pro Lys Lys Asp
 1   5   10   15
Pro Lys Val Lys Gly Val Gln Ser Ala Ala Val Gln Ala Phe Leu Lys
                20   25   30
Arg Lys Glu Glu Glu Leu Arg Arg Lys Ala Leu Glu Glu Lys Arg Arg
          35   40   45
Lys Glu Glu Leu Val Lys Lys Arg Ile Glu Leu Lys His Asp Lys Lys
     50   55   60
Ala Arg Ala Met Ala Lys Arg Thr Lys Asp Asn Phe His Gly Tyr Asn
65   70   75   80
Gly Ile Pro Ile Glu Glu Lys Ser Lys Lys Arg Gln Ala Thr Glu Ser
                85   90   95
His Thr Ser Gln Gly Thr Asp Arg Glu Tyr Glu Met Glu Glu Glu Asn
              100   105   110
Glu Phe Leu Glu Tyr Asn His Ala Glu Ser Glu Gln Glu Tyr Glu Glu
          115   120   125
Glu Gln Glu Pro Pro Lys Val Glu Ser Lys Pro Lys Val Ser Leu Lys
          130   135   140
Gly Ala Pro Pro Pro Met Asn Phe Thr Asp Leu Leu Arg Leu Ala Glu
145   150   155   160
Lys Lys Gln Phe Glu Pro Val Glu Ile Lys Val Val Lys Lys Ser Glu
              165   170   175
Glu Arg Pro Met Thr Ala Glu Glu Leu Arg Glu Arg Glu Phe Leu Glu
              180   185   190
Arg Lys His Arg Arg Lys Lys Leu Glu Thr Asp Gly Lys Leu Pro Pro
          195   200   205
Thr Val Ser Lys Lys Ala Pro Leu Gly Arg Lys
     210   215

<210> 4045
<211> 2217
<212> DNA
<213> Homo sapiens

<400> 4045
ngtagctaca gtacatactg atgagtgaag aatggtttgc tttgggaata ttttcttagt
60
tcttcaagga catgatgtgg aagtcttgac ttgagtaact tcaatagcac taacaacagg
120
aattgaaaaa aacttagaat tttaaagctg agaaagagtt atcgctgtga tgattttgtg
180

```
gttaatgaca ccaagctggg actggtacag aaagtcagag aacacttaca gaacttggaa
240
aactcagctt tcacagctga caggcataag aaaagaaaac ttttggaaaa ctcaacacta
300
aacagcaagt tattaaaagt aaatggaagc accactgcca tttgtgccac aggccttcgg
360
aatttgggga acacatgttt catgaatgcc atccttcagt cactcagtaa cattgagcag
420
ttttgctgtt atttcaaaga actgcccgcc gtggagttaa ggaatgggaa aacagcagga
480
aggcggacat accacaccag gagccaaggg gataacaatg tgtctttggt agaagagttt
540
agaaagacac tctgtgcttt atggcaaggc agccagactg catttagccc agagtcctta
600
tttttatgttg tttggaagat tatgccaaac tttaggggct atcaacagca ggacgcccat
660
gaattcnatg cgctaccttt tggaccacct acacttggan acttcagggc ggtttcaacg
720
gtgtttcccg ctcagcaatt ctgcaggaga attctactct gtctgcaagt anacaagtgt
780
tgcataaatg gagcatctac tgttgtcacg gctatattcg gaggcattct ccaaaatgag
840
gttaactgcc tcatatgtgg gacagaatct agaaagtttg atccattcct agacctttca
900
ttagatattc caagtcagtt cagaagtaag cgctctaaga atcaagaaaa tggaccagtt
960
tgttcgttac gagattgtct tcgcagtttt accgacttag aagaacttga tgagacagag
1020
ttatatatgt gccataaatg caaanagaaa caaaagtcca caaaaaagtt ttggattcaa
1080
aaactaccca aggtgctatg cttacatttg aaaagatttc attggacagc atatttaaga
1140
aataaagttg atacatacgt agaatttcca ctgagaggcc tagacatgaa atgctactta
1200
ctagatcctg agaacagtgg cccggagagc tgcctgtatg acctcgccgc tgtggtggtg
1260
caccatggtt ccggggttgg ttctggacat tacacagcat acgcaactca cgaaggccgc
1320
tggttccact tcaatgacag tactgtaaca ctgactgacg aagagactgt ggtgaaggcg
1380
aaggctaaca tccttttcta cgtggaacac caggccaaag ctggatcgga taaactttaa
1440
tacctcctcc aaatcatcat tcaccaacca taccagagaa acatttccag ttttccacaa
1500
atacttgata caagatttaa tttcattatg cacttttcaa tttcctattt tggatttagt
1560
tttgtcaatg gtagtgactt actgaacatg ggcaccaact aattttgttg ttgttctacc
1620
agaaaacctc agcagatgtt ttgatttgct gctttagttg taataattca atttttatag
1680
gtagttgtaa gaacttagtc ttatttgact tttttatttt atgttaatgt tttcagttct
1740
cactttgagg cacatttaca tcaatgcttt tgttcctctc acatgctgaa agcaagatgt
1800
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3224

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gttccttatt gtgaagagcg acacaactgc ctgctgcctt tccacagcta taatggacat
1860
caggttgact ctaaatcaag gatcatgtgt gcacaatact tgtggcccac aaaatttcac
1920
aatgactgct gaggaatcat tcttttttgcc tgtaaaatat aacaaagggc atcattaagt
1980
agaccaggta attactgctt gtctctcaag gctgctgtct ttatcagcac taactaaata
2040
aatttgttgg ttcagttgta cttgtcctgc aaatacaaga attactctct ttgttggttt
2100
ttttggtttt ggggcatact tgtttgcggg gaggtaagat gggagtaaag accaaataca
2160
tgtaatgttt aaaaaaaatg ctgtgactcc ctgacatggt ataggtgtta ccagtga
2217


<210> 4046
<211> 437
<212> PRT
<213> Homo sapiens


<400> 4046
Lys Lys Leu Arg Ile Leu Lys Leu Arg Lys Ser Tyr Arg Cys Asp Asp
 1               5                  10                  15
Phe Val Val Asn Asp Thr Lys Leu Gly Leu Val Gln Lys Val Arg Glu
            20                  25                  30
His Leu Gln Asn Leu Glu Asn Ser Ala Phe Thr Ala Asp Arg His Lys
        35                  40                  45
Lys Arg Lys Leu Leu Glu Asn Ser Thr Leu Asn Ser Lys Leu Leu Lys
    50                  55                  60
Val Asn Gly Ser Thr Thr Ala Ile Cys Ala Thr Gly Leu Arg Asn Leu
65                  70                  75                  80
Gly Asn Thr Cys Phe Met Asn Ala Ile Leu Gln Ser Leu Ser Asn Ile
                85                  90                  95
Glu Gln Phe Cys Cys Tyr Phe Lys Glu Leu Pro Ala Val Glu Leu Arg
            100                 105                 110
Asn Gly Lys Thr Ala Gly Arg Arg Thr Tyr His Thr Arg Ser Gln Gly
        115                 120                 125
Asp Asn Asn Val Ser Leu Val Glu Glu Phe Arg Lys Thr Leu Cys Ala
    130                 135                 140
Leu Trp Gln Gly Ser Gln Thr Ala Phe Ser Pro Glu Ser Leu Phe Tyr
145                 150                 155                 160
Val Val Trp Lys Ile Met Pro Asn Phe Arg Gly Tyr Gln Gln Gln Asp
                165                 170                 175
Ala His Glu Phe Xaa Ala Leu Pro Phe Gly Pro Pro Thr Leu Gly Xaa
            180                 185                 190
Phe Arg Ala Val Ser Thr Val Phe Pro Ala Gln Gln Phe Cys Arg Arg
            195                 200                 205
Ile Leu Leu Cys Leu Gln Val Xaa Lys Cys Cys Ile Asn Gly Ala Ser
    210                 215                 220
Thr Val Val Thr Ala Ile Phe Gly Gly Ile Leu Gln Asn Glu Val Asn
225                 230                 235                 240
Cys Leu Ile Cys Gly Thr Glu Ser Arg Lys Phe Asp Pro Phe Leu Asp
                245                 250                 255
Leu Ser Leu Asp Ile Pro Ser Gln Phe Arg Ser Lys Arg Ser Lys Asn
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                                    3225

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              260                265                270
Gln Glu Asn Gly Pro Val Cys Ser Leu Arg Asp Cys Leu Arg Ser Phe
          275                280                285
Thr Asp Leu Glu Glu Leu Asp Glu Thr Glu Leu Tyr Met Cys His Lys
      290                295                300
Cys Lys Xaa Lys Gln Lys Ser Thr Lys Lys Phe Trp Ile Gln Lys Leu
305                310                315                320
Pro Lys Val Leu Cys Leu His Leu Lys Arg Phe His Trp Thr Ala Tyr
              325                330                335
Leu Arg Asn Lys Val Asp Thr Tyr Val Glu Phe Pro Leu Arg Gly Leu
          340                345                350
Asp Met Lys Cys Tyr Leu Leu Asp Pro Glu Asn Ser Gly Pro Glu Ser
      355                360                365
Cys Leu Tyr Asp Leu Ala Ala Val Val Val His His Gly Ser Gly Val
      370                375                380
Gly Ser Gly His Tyr Thr Ala Tyr Ala Thr His Glu Gly Arg Trp Phe
385                390                395                400
His Phe Asn Asp Ser Thr Val Thr Leu Thr Asp Glu Glu Thr Val Val
              405                410                415
Lys Ala Lys Ala Asn Ile Leu Phe Tyr Val Glu His Gln Ala Lys Ala
          420                425                430
Gly Ser Asp Lys Leu
          435


<210> 4047
<211> 809
<212> DNA
<213> Homo sapiens

<400> 4047
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cctaaaagca ttcattgccc cagtagttct taattgtctt ggaaatcatt ctcttgcaaa
180
cttcacattt ccatatcata ctttactta cgctattact tcatgggctc ctgggcattt
240
ggtctgtttg tgtttctcct ttcctctttg aacaaagtca ggaaaaatgt gtcagtagga
300
gaaaggagga gctgaaggga gtaaataatt caagatcact tctgtcattt gtagtggctg
360
agggctagaa agatattctt cggtgaagaa actcccaaca ggttccatca gactgataca
420
acttcagggg ggccaccctc tgcagatggc agtgaatttg cacctgtttg tggtacaggc
480
actaccacag catctttgat gtctgtgttt acattacatg agaagttctt ctccagtttt
540
ttggcagtgt ctgggcaatt ttgtacaaag atcacacggt tgtaggcctt cagcctgcgc
600
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atggctacca caaccagttt tgtccaaaat ggccattcaa ggacaccttt gaaatgaaaa
720
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780
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809

<210> 4048
<211> 118
<212> PRT
<213> Homo sapiens

<400> 4048
Met Thr Lys Ser Thr Glu Asp Asn Leu Val Ile Thr Phe Ser Leu Phe
 1   5   10   15
His Phe Lys Gly Val Leu Glu Trp Pro Phe Trp Thr Lys Leu Val Val
            20   25   30
Val Ala Ile Gly Phe Thr Gly Gly Leu Val Phe Met Tyr Val Gln Cys
        35   40   45
Lys Val Tyr Val Gln Leu Trp Arg Arg Leu Lys Ala Tyr Asn Arg Val
    50   55   60
Ile Phe Val Gln Asn Cys Pro Asp Thr Ala Lys Lys Leu Glu Lys Asn
65   70   75   80
Phe Ser Cys Asn Val Asn Thr Asp Ile Lys Asp Ala Val Val Val Pro
                85   90   95
Val Pro Gln Thr Gly Ala Asn Ser Leu Pro Ser Ala Glu Gly Gly Pro
            100   105   110
Pro Glu Val Val Ser Val
        115

<210> 4049
<211> 1211
<212> DNA
<213> Homo sapiens

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120
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gagtttacca gcagggattc acagagctcc gacaagcaga ttctaaacat ctatgacctg
240
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300
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360
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420
gccaagagcc agcatctgga cagtgatggg ctggcccaga ttttcatgca gtatggagac
480
catctctaca gcaagggcaa ccacgatggg gctgtccagc aatatatccg aaccattgga
540
aagttggagc atcctacgt gatccgcaag tttctggatg cccagcgcat tcacaacctg
600

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actgcctacc tgcagaccct gcaccgacaa tccctggcca atgccgacca taccaccctg
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720
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1211


<210> 4050
<211> 403
<212> PRT
<213> Homo sapiens

<400> 4050
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Glu Cys Val Tyr Leu Tyr Gln Pro Asp Glu Arg Gly Pro Cys Phe Ala
                20                  25                  30
Phe Glu Gly His Lys Leu Ile Ala His Trp Phe Arg Gly Tyr Leu Ile
            35                  40                  45
Ile Val Ser Arg Asp Arg Lys Val Ser Pro Lys Ser Glu Phe Thr Ser
        50                  55                  60
Arg Asp Ser Gln Ser Ser Asp Lys Gln Ile Leu Asn Ile Tyr Asp Leu
65                  70                  75                  80
Cys Asn Lys Phe Ile Ala Tyr Ser Thr Val Phe Glu Asp Val Val Asp
                85                  90                  95
Val Leu Ala Glu Trp Gly Ser Leu Tyr Val Leu Thr Arg Asp Gly Arg
                100                 105                 110
Val His Ala Leu Gln Glu Lys Asp Thr Gln Thr Lys Leu Glu Met Leu
            115                 120                 125
Phe Lys Lys Asn Leu Phe Glu Met Ala Ile Asn Leu Ala Lys Ser Gln
        130                 135                 140
His Leu Asp Ser Asp Gly Leu Ala Gln Ile Phe Met Gln Tyr Gly Asp
145                 150                 155                 160
His Leu Tyr Ser Lys Gly Asn His Asp Gly Ala Val Gln Gln Tyr Ile
                165                 170                 175
Arg Thr Ile Gly Lys Leu Glu Pro Ser Tyr Val Ile Arg Lys Phe Leu
                180                 185                 190
Asp Ala Gln Arg Ile His Asn Leu Thr Ala Tyr Leu Gln Thr Leu His
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3228

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                195                    200                    205
Arg Gln Ser Leu Ala Asn Ala Asp His Thr Thr Leu Leu Leu Asn Cys
    210                    215                    220
Tyr Thr Lys Leu Lys Asp Ser Ser Lys Leu Glu Glu Phe Ile Lys Lys
225                    230                    235                    240
Lys Ser Glu Ser Glu Val His Phe Asp Val Glu Thr Ala Ile Lys Val
                245                    250                    255
Leu Arg Gln Ala Gly Tyr Tyr Ser His Ala Leu Tyr Leu Ala Glu Asn
                260                    265                    270
His Ala His His Glu Trp Tyr Leu Lys Ile Gln Leu Glu Asp Ile Lys
    275                    280                    285
Asn Tyr Gln Glu Ala Leu Arg Tyr Ile Gly Lys Leu Pro Phe Glu Gln
    290                    295                    300
Ala Glu Ser Asn Met Lys Arg Tyr Gly Lys Ile Leu Met His His Ile
305                    310                    315                    320
Pro Glu Gln Thr Thr Gln Leu Leu Lys Gly Leu Cys Thr Asp Tyr Arg
                325                    330                    335
Pro Ser Leu Glu Gly Arg Ser Asp Arg Glu Ala Pro Gly Cys Arg Ala
                340                    345                    350
Asn Ser Glu Glu Phe Ile Pro Ile Phe Ala Asn Asn Pro Arg Glu Leu
                355                    360                    365
Lys Ala Phe Leu Glu His Met Ser Glu Val Gln Pro Asp Ser Pro Gln
    370                    375                    380
Gly Ile Tyr Asp Thr Leu Leu Glu Leu Arg Leu Gln Asn Trp Ala His
385                    390                    395                    400
Glu Lys Asp
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<210>  4051
<211>  1645
<212>  DNA
<213>  Homo sapiens

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120
ctggggggt aaaaaaggtc gggaggagga attaaggaa atacaggaat aggggaacat
180
atcccacatt aaatagttat atatatacac atcagttcct gtggttctgt acagagcagc
240
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300
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360
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420
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600
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1645

<210> 4052
<211> 93
<212> PRT
<213> Homo sapiens

<400> 4052
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Gly Gly Asn Ala Trp Gly Gly Ala Cys Leu Pro Ala Pro Tyr Gly Gly
            20   25   30
Ala Glu Gly Val Arg Pro Pro Pro Gly Pro Ala Pro Leu Pro Pro Gly
        35   40   45
Pro Thr Lys Pro Leu Pro Pro Ala Pro Pro Ser Met Gly Ser Asp Ser
    50   55   60
Ser Gly Glu Arg Ser Pro Ser Pro Pro Trp Pro Pro Pro Pro Pro Pro
65   70   75   80
Ala Gln Val Gly Asp Pro Ala Pro Phe Ala Ser Ala Val

85   90

<210> 4053
<211> 461
<212> DNA
<213> Homo sapiens

<400> 4053
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461

<210> 4054
<211> 96
<212> PRT
<213> Homo sapiens

<400> 4054
Met Arg Leu Cys Ser Pro Gly Ser Gln Pro Gly Thr Gln Asn Leu His
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Pro Gly Pro Arg Glu Tyr Arg Thr Pro Val Gly Thr Gly Ile Ile Pro
            20   25   30
Arg Pro Gly Gly Thr Glu Thr Leu Arg Glu Ala Cys Ala Ala Leu Gly
        35   40   45
Glu Gly Arg Gly Gly Ser Arg His Ser Cys Pro Arg Arg Val Gly Arg
    50   55   60
Arg Ser Val Leu Lys Gly Gly Gln Gly Ser Phe Val Leu Asn Arg Glu
65   70   75   80
Gly Gln Ile Tyr Ser Leu Gly Pro Ser Gly Val Ala Ala Arg Glu Arg
                85   90   95

<210> 4055
<211> 8458
<212> DNA
<213> Homo sapiens

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120

3231

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1740
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3360
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4980
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                                       3234

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5640

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5940

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6060

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6180

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6240

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6300

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6360

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6480

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6600

3235

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8220
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8458
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<213> Homo sapiens

<400> 4056
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            20                  25                  30
Cys Phe Ala Ser Leu Ala Asp Arg Phe Thr Arg Arg Gly Val Asp Pro
            35                  40                  45
Ala Pro Leu Ala Lys His Gly Leu Thr Glu Glu Leu Leu Ser Arg Met
    50                  55                  60
Ala Ala Ala Gly Gly Thr Val Ser Gly Pro Ser Ser Ala Cys Lys Pro
65                  70                  75                  80
Gly Arg Ser Thr Thr Gly Ala Pro Ser Thr Thr Ala Asp Ser Lys Leu
                85                  90                  95
Ser Asn Gln Val Ser Thr Ile Val Ser Leu Leu Ser Thr Leu Cys Arg
            100                 105                 110
Gly Ser Pro Val Val Thr His Asp Leu Leu Arg Ser Glu Leu Pro Asp
            115                 120                 125
Ser Ile Glu Ser Ala Leu Gln Gly Asp Glu Arg Cys Val Leu Asp Thr
    130                 135                 140
Met Arg Leu Val Asp Leu Leu Leu Val Leu Leu Phe Glu Gly Arg Lys
145                 150                 155                 160
Ala Leu Pro Lys Ser Ser Ala Gly Ser Thr Gly Arg Ile Pro Gly Leu
                165                 170                 175
Arg Arg Leu Asp Ser Ser Gly Glu Arg Ser His Arg Gln Leu Ile Asp
            180                 185                 190
Cys Ile Arg Ser Lys Asp Thr Asp Ala Leu Ile Asp Ala Ile Asp Thr
    195                 200                 205
Gly Ala Phe Glu Val Asn Phe Met Asp Asp Val Gly Gln Thr Leu Leu
    210                 215                 220
Asn Trp Ala Ser Ala Phe Gly Thr Gln Glu Met Val Glu Phe Leu Cys
225                 230                 235                 240
Glu Arg Gly Ala Asp Val Asn Arg Gly Gln Arg Ser Ser Ser Leu His
                245                 250                 255
Tyr Ala Ala Cys Phe Gly Arg Pro Gln Val Ala Lys Thr Leu Leu Arg
            260                 265                 270
His Gly Ala Asn Pro Asp Leu Arg Asp Glu Asp Gly Lys Thr Pro Leu
            275                 280                 285
Asp Lys Ala Arg Glu Arg Gly His Ser Glu Val Val Ala Ile Leu Gln
    290                 295                 300
Ser Pro Gly Asp Trp Met Cys Pro Val Asn Lys Gly Asp Asp Lys Lys
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3237

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305                     310                     315                     320
Lys Lys Asp Thr Asn Lys Asp Glu Glu Glu Cys Asn Glu Pro Lys Gly
                325                     330                     335
Asp Pro Glu Met Ala Pro Ile Tyr Leu Lys Arg Leu Leu Pro Val Phe
                340                     345                     350
Ala Gln Thr Phe Gln Gln Thr Met Leu Pro Ser Ile Arg Lys Ala Ser
                355                     360                     365
Leu Ala Leu Ile Arg Lys Met Ile His Phe Cys Ser Glu Ala Leu Leu
        370                     375                     380
Lys Glu Val Cys Asp Ser Asp Val Gly His Asn Leu Pro Thr Ile Leu
385                     390                     395                     400
Val Glu Ile Thr Ala Thr Val Leu Asp Gln Glu Asp Asp Asp Asp Gly
                        405                     410                     415
His Leu Leu Ala Leu Gln Ile Ile Arg Asp Leu Val Asp Lys Gly Gly
                420                     425                     430
Asp Ile Phe Leu Asp Gln Leu Ala Arg Leu Gly Val Ile Ser Lys Val
        435                     440                     445
Ser Thr Leu Ala Gly Pro Ser Ser Asp Asp Glu Asn Glu Glu Glu Ser
        450                     455                     460
Lys Pro Glu Lys Glu Asp Glu Pro Gln Glu Asp Ala Lys Glu Leu Gln
465                     470                     475                     480
Gln Gly Lys Pro Tyr His Trp Arg Asp Trp Ser Ile Ile Arg Gly Arg
                485                     490                     495
Asp Cys Leu Tyr Ile Trp Ser Asp Ala Ala Ala Leu Glu Leu Ser Asn
                500                     505                     510
Gly Ser Asn Gly Trp Phe Arg Phe Ile Leu Asp Gly Lys Leu Ala Thr
                515                     520                     525
Met Tyr Ser Ser Gly Ser Pro Glu Gly Gly Ser Asp Ser Ser Glu Ser
        530                     535                     540
Arg Ser Glu Phe Leu Glu Lys Leu Gln Arg Ala Arg Gly Gln Val Lys
545                     550                     555                     560
Pro Ser Thr Ser Ser Gln Pro Ile Leu Ser Ala Pro Gly Pro Thr Lys
                565                     570                     575
Leu Thr Val Gly Asn Trp Ser Leu Thr Cys Leu Lys Glu Gly Glu Ile
                580                     585                     590
Ala Ile His Asn Ser Asp Gly Gln Gln Ala Thr Ile Leu Lys Glu Asp
        595                     600                     605
Leu Pro Gly Phe Val Phe Glu Ser Asn Arg Gly Thr Lys His Ser Phe
        610                     615                     620
Thr Ala Glu Thr Ser Leu Gly Ser Glu Phe Val Thr Gly Trp Thr Gly
625                     630                     635                     640
Lys Arg Gly Arg Lys Leu Lys Ser Lys Leu Glu Lys Thr Lys Xaa Lys
                645                     650                     655
Val Arg Thr Met Ala Arg Asp Leu Tyr Asp Asp His Phe Lys Ala Val
                660                     665                     670
Glu Ser Met Pro Arg Gly Val Val Val Thr Leu Arg Asn Ile Ala Thr
        675                     680                     685
Gln Leu Glu Ser Ser Trp Glu Leu His Thr Asn Arg Gln Cys Ile Glu
        690                     695                     700
Ser Glu Asn Thr Trp Arg Asp Leu Met Lys Thr Ala Leu Glu Asn Leu
705                     710                     715                     720
Ile Val Leu Leu Lys Asp Glu Asn Thr Ile Ser Pro Tyr Glu Met Cys
                725                     730                     735
Ser Ser Gly Leu Val Gln Ala Leu Leu Thr Val Leu Asn Asn Ser Met
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                740                   745                   750
Asp Leu Asp Met Lys Gln Asp Cys Ser Gln Leu Val Glu Arg Ile Asn
        755                   760                   765
Val Phe Lys Thr Ala Phe Ser Glu Asn Glu Asp Asp Glu Ser Arg Pro
    770                   775                   780
Ala Val Ala Leu Ile Arg Lys Leu Ile Ala Val Leu Glu Ser Ile Glu
785                   790                   795                   800
Arg Leu Pro Leu His Leu Tyr Asp Thr Pro Gly Ser Thr Tyr Asn Leu
                805                   810                   815
Gln Ile Leu Thr Arg Arg Leu Arg Phe Arg Leu Glu Arg Ala Pro Gly
            820                   825                   830
Glu Thr Ala Leu Ile Asp Arg Thr Gly Arg Met Leu Lys Met Glu Pro
                835                   840                   845
Leu Ala Thr Val Glu Ser Leu Glu Gln Tyr Leu Leu Lys Met Val Ala
    850                   855                   860
Lys Gln Trp Tyr Asp Phe Asp Arg Ser Ser Phe Val Phe Val Arg Lys
865                   870                   875                   880
Leu Arg Glu Gly Gln Asn Phe Ile Phe Arg His Gln His Asp Phe Asp
                885                   890                   895
Glu Asn Gly Ile Ile Tyr Trp Ile Gly Thr Asn Ala Lys Thr Ala Tyr
            900                   905                   910
Glu Trp Val Asn Pro Ala Ala Tyr Gly Leu Val Val Val Thr Ser Ser
            915                   920                   925
Glu Gly Arg Asn Leu Pro Tyr Gly Arg Leu Glu Asp Ile Leu Ser Arg
    930                   935                   940
Asp Asn Ser Ala Leu Asn Cys His Ser Asn Asp Asp Lys Asn Ala Trp
945                   950                   955                   960
Phe Ala Ile Asp Leu Gly Leu Trp Val Ile Pro Ser Ala Tyr Thr Leu
                965                   970                   975
Arg His Ala Arg Gly Tyr Gly Arg Ser Ala Leu Arg Asn Trp Val Phe
                980                   985                   990
Gln Val Ser Lys Asp Gly Gln Asn Trp Thr Ser Leu Tyr Thr His Val
            995                   1000                  1005
Asp Asp Cys Ser Leu Asn Glu Pro Gly Ser Thr Ala Thr Trp Pro Leu
    1010                  1015                  1020
Asp Pro Pro Lys Asp Glu Lys Gln Gly Trp Arg His Val Arg Ile Lys
1025                  1030                  1035                  1040
Gln Met Gly Lys Asn Ala Ser Gly Gln Thr His Tyr Leu Ser Leu Ser
                1045                  1050                  1055
Gly Phe Glu Leu Tyr Gly Thr Val Asn Gly Val Cys Glu Asp Gln Leu
            1060                  1065                  1070
Gly Lys Ala Ala Lys Glu Ala Glu Ala Asn Leu Arg Arg Gln Arg Arg
        1075                  1080                  1085
Leu Val Arg Ser Gln Val Leu Lys Tyr Met Val Pro Gly Ala Arg Val
    1090                  1095                  1100
Ile Arg Gly Leu Asp Trp Lys Trp Arg Asp Gln Asp Gly Ser Pro Gln
1105                  1110                  1115                  1120
Gly Glu Gly Thr Val Thr Gly Glu Leu His Asn Gly Trp Ile Asp Val
                1125                  1130                  1135
Thr Trp Asp Ala Gly Gly Ser Asn Ser Tyr Arg Met Gly Ala Glu Gly
            1140                  1145                  1150
Lys Phe Asp Leu Lys Leu Ala Pro Gly Tyr Asp Pro Asp Thr Val Ala
            1155                  1160                  1165
Ser Pro Lys Pro Val Ser Ser Thr Val Ser Gly Thr Thr Gln Ser Trp
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            1170                    1175                    1180
Ser Ser Leu Val Lys Asn Asn Cys Pro Asp Lys Thr Ser Ala Ala Ala
1185                    1190                    1195                    1200
Gly Ser Ser Ser Arg Lys Gly Ser Ser Ser Val Cys Ser Val Ala
                        1205                    1210                    1215
Ser Ser Ser Asp Ile Ser Leu Gly Ser Thr Lys Thr Glu Arg Arg Ser
                1220                    1225                    1230
Glu Ile Val Met Glu His Ser Ile Val Ser Gly Ala Asp Val His Glu
            1235                    1240                    1245
Pro Ile Val Val Leu Ser Ser Ala Glu Asn Val Pro Gln Thr Glu Val
        1250                    1255                    1260
Gly Ser Ser Ser Ser Ala Ser Thr Ser Thr Leu Thr Ala Glu Thr Gly
1265                    1270                    1275                    1280
Ser Glu Asn Ala Glu Arg Lys Leu Gly Pro Asp Ser Ser Val Arg Thr
                        1285                    1290                    1295
Pro Gly Glu Ser Ser Ala Ile Ser Met Gly Ile Val Ser Val Ser Ser
                1300                    1305                    1310
Pro Asp Val Ser Ser Val Ser Glu Leu Thr Asn Lys Glu Ala Ala Ser
            1315                    1320                    1325
Gln Arg Pro Leu Ser Ser Ser Ala Ser Asn Arg Leu Ser Val Ser Ser
        1330                    1335                    1340
Leu Leu Ala Ala Gly Ala Pro Met Ser Ser Ser Ala Ser Val Pro Asn
1345                    1350                    1355                    1360
Leu Ser Ser Arg Glu Thr Ser Ser Leu Glu Ser Phe Val Arg Arg Val
                        1365                    1370                    1375
Ala Asn Ile Ala Arg Thr Asn Ala Thr Asn Asn Met Asn Leu Ser Arg
                1380                    1385                    1390
Ser Ser Ser Asp Asn Asn Thr Asn Thr Leu Gly Arg Asn Val Met Ser
                1395                    1400                    1405
Thr Ala Thr Ser Pro Leu Met Gly Ala Gln Ser Phe Pro Asn Leu Thr
        1410                    1415                    1420
Thr Pro Gly Thr Thr Ser Thr Val Thr Met Ser Thr Ser Ser Val Thr
1425                    1430                    1435                    1440
Ser Ser Ser Asn Val Ala Thr Ala Thr Thr Val Leu Ser Val Gly Gln
                1445                    1450                    1455
Ser Leu Ser Asn Thr Leu Thr Thr Ser Leu Thr Ser Thr Ser Ser Glu
                1460                    1465                    1470
Ser Asp Thr Gly Gln Glu Ala Glu Tyr Ser Leu Tyr Asp Phe Leu Asp
            1475                    1480                    1485
Ser Cys Arg Ala Ser Thr Leu Leu Ala Glu Leu Asp Asp Asp Glu Asp
        1490                    1495                    1500
Leu Pro Glu Pro Asp Glu Glu Asp Asp Glu Asn Glu Asp Asp Asn Gln
1505                    1510                    1515                    1520
Glu Asp Gln Glu Tyr Glu Glu Val Met Ile Leu Arg Arg Pro Ser Leu
                1525                    1530                    1535
Gln Arg Arg Ala Gly Ser Arg Ser Asp Val Thr His His Ala Val Thr
            1540                    1545                    1550
Ser Gln Leu Pro Gln Val Pro Ala Gly Ala Gly Ser Arg Pro Ile Gly
        1555                    1560                    1565
Glu Gln Glu Glu Glu Glu Tyr Glu Thr Lys Gly Gly Arg Arg Arg Thr
            1570                    1575                    1580
Trp Asp Asp Asp Tyr Val Leu Lys Arg Gln Phe Ser Ala Leu Val Pro
1585                    1590                    1595                    1600
Ala Phe Asp Pro Arg Pro Gly Arg Thr Asn Val Gln Gln Thr Thr Asp
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                        1605              1610              1615
Leu Glu Ile Pro Pro Pro Gly Thr Pro His Ser Glu Leu Leu Glu Glu
            1620              1625              1630
Val Glu Cys Thr Pro Ser Pro Arg Leu Ala Leu Thr Leu Lys Val Thr
        1635              1640              1645
Gly Leu Gly Thr Thr Arg Glu Val Glu Leu Pro Leu Thr Asn Phe Arg
        1650              1655              1660
Ser Thr Ile Phe Tyr Tyr Val Gln Lys Leu Leu Gln Leu Ser Cys Asn
1665              1670              1675              1680
Gly Asn Val Lys Ser Asp Lys Leu Arg Arg Ile Trp Glu Pro Thr Tyr
            1685              1690              1695
Thr Ile Met Tyr Arg Glu Met Lys Asp Ser Asp Lys Glu Lys Glu Asn
            1700              1705              1710
Gly Lys Met Gly Cys Trp Ser Ile Glu His Val Glu Gln Tyr Leu Gly
        1715              1720              1725
Thr Asp Glu Leu Pro Lys Asn Asp Leu Ile Thr Tyr Leu Gln Lys Asn
        1730              1735              1740
Ala Asp Ala Ala Phe Leu Arg His Trp Lys Leu Thr Gly Thr Asn Lys
1745              1750              1755              1760
Ser Ile Arg Lys Asn Arg Asn Cys Ser Gln Leu Ile Ala Ala Tyr Lys
            1765              1770              1775
Asp Phe Cys Glu His Gly Thr Lys Ser Gly Leu Asn Gln Gly Ala Ile
            1780              1785              1790
Ser Thr Leu Gln Ser Ser Asp Ile Leu Asn Leu Thr Lys Glu Gln Pro
        1795              1800              1805
Gln Ala Lys Ala Gly Asn Gly Gln Asn Ser Cys Gly Val Glu Asp Val
        1810              1815              1820
Leu Gln Leu Leu Arg Ile Leu Tyr Ile Val Ala Ser Asp Pro Tyr Ser
1825              1830              1835              1840
Arg Ile Ser Gln Glu Asp Gly Asp Glu Gln Pro Gln Phe Thr Phe Pro
            1845              1850              1855
Pro Asp Glu Phe Thr Ser Lys Lys Ile Thr Thr Lys Ile Leu Gln Gln
            1860              1865              1870
Ile Glu Glu Pro Leu Ala Leu Ala Ser Gly Ala Leu Pro Asp Trp Cys
        1875              1880              1885
Glu Gln Leu Thr Ser Lys Cys Pro Phe Leu Ile Pro Phe Glu Thr Arg
        1890              1895              1900
Gln Leu Tyr Phe Thr Cys Thr Ser Phe Gly Ala Ser Arg Ala Ile Val
1905              1910              1915              1920
Trp Leu Gln Asn Arg Arg Glu Ala Thr Val Glu Arg Thr Arg Thr Thr
            1925              1930              1935
Ser Ser Val Arg Arg Asp Asp Pro Gly Glu Phe Arg Val Gly Arg Leu
            1940              1945              1950
Lys His Glu Arg Val Lys Val Pro Arg Gly Glu Ser Leu Met Glu Trp
        1955              1960              1965
Ala Glu Asn Val Met Gln Ile His Ala Asp Arg Lys Ser Val Leu Glu
        1970              1975              1980
Val Glu Phe Leu Gly Glu Glu Gly Thr Gly Leu Gly Pro Thr Leu Glu
1985              1990              1995              2000
Phe Tyr Ala Leu Val Ala Ala Glu Phe Gln Arg Thr Asp Leu Gly Ala
            2005              2010              2015
Trp Leu Cys Asp Asp Asn Phe Pro Asp Asp Glu Ser Arg His Val Asp
        2020              2025              2030
Leu Gly Gly Gly Leu Lys Pro Pro Gly Tyr Tyr Val Gln Arg Ser Cys
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3241

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              2035                    2040                    2045
Gly Leu Phe Thr Ala Pro Phe Pro Gln Asp Ser Asp Glu Leu Glu Arg
         2050                    2055                    2060
Ile Thr Lys Leu Phe His Phe Leu Gly Ile Phe Leu Ala Lys Cys Ile
2065                    2070                    2075                    2080
Gln Asp Asn Arg Leu Val Asp Leu Pro Ile Ser Lys Pro Phe Phe Lys
                   2085                    2090                    2095
Leu Met Cys Met Gly Asp Ile Lys Ser Asn Met Ser Lys Leu Ile Tyr
              2100                    2105                    2110
Glu Ser Arg Gly Asp Arg Asp Leu His Cys Thr Glu Ser Gln Ser Glu
              2115                    2120                    2125
Ala Ser Thr Glu Glu Gly His Asp Ser Leu Ser Val Gly Ser Phe Glu
         2130                    2135                    2140
Glu Asp Ser Lys Ser Glu Phe Ile Leu Asp Pro Pro Lys Pro Lys Pro
2145                    2150                    2155                    2160
Pro Ala Trp Leu Asn Gly Ile Leu Thr Trp Glu Asp Phe Glu Leu Val
                   2165                    2170                    2175
Asn Pro His Arg Ala Arg Phe Leu Lys Glu Ile Lys Asp Leu Ala Ile
              2180                    2185                    2190
Lys Arg Arg Gln Ile Leu Ser Asn Lys Gly Leu Ser Glu Asp Glu Lys
         2195                    2200                    2205
Asn Thr Lys Leu Gln Glu Leu Val Leu Lys Asn Pro Ser Gly Ser Gly
         2210                    2215                    2220
Pro Pro Leu Ser Ile Glu Asp Leu Gly Leu Asn Phe Gln Phe Cys Pro
2225                    2230                    2235                    2240
Ser Ser Arg Ile Tyr Gly Phe Thr Ala Val Asp Leu Lys Pro Ser Gly
                   2245                    2250                    2255
Glu Asp Glu Met Ile Thr Met Asp Asn Ala Glu Glu Tyr Val Asp Leu
              2260                    2265                    2270
Met Phe Asp Phe Cys Met His Thr Gly Ile Gln Lys Gln Met Glu Ala
              2275                    2280                    2285
Phe Arg Asp Gly Phe Asn Lys Val Phe Pro Met Glu Lys Leu Ser Ser
         2290                    2295                    2300
Phe Ser His Glu Glu Val Gln Met Ile Leu Cys Gly Asn Gln Ser Pro
2305                    2310                    2315                    2320
Ser Trp Ala Ala Glu Asp Ile Ile Asn Tyr Thr Glu Pro Lys Leu Gly
                   2325                    2330                    2335
Tyr Thr Arg Asp Ser Pro Gly Phe Leu Arg Phe Val Arg Val Leu Cys
              2340                    2345                    2350
Gly Met Ser Ser Asp Glu Arg Lys Ala Phe Leu Gln Phe Thr Thr Gly
         2355                    2360                    2365
Cys Ser Thr Leu Pro Pro Gly Gly Leu Ala Asn Leu His Pro Arg Leu
         2370                    2375                    2380
Thr Val Val Arg Lys Val Asp Ala Thr Asp Ala Ser Tyr Pro Ser Val
2385                    2390                    2395                    2400
Asn Thr Cys Val His Tyr Leu Lys Leu Pro Glu Tyr Ser Ser Glu Glu
                   2405                    2410                    2415
Ile Met Arg Glu Arg Leu Leu Ala Ala Thr Met Glu Lys Gly Phe His
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Leu Asn
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<211> 533
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<213> Homo sapiens

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120
cagttccatt ctcagttctt cctcccagag ctgcagcggc gcctggacga ctggacagct
180
aaccccgca tcggtgacgt gatccagaag ctggccccct tcctgaagat gtacagtgag
240
tatgtcaaga actttgagcg agcggctgag ctgctggcca cctggaccga caagtctcca
300
ctcttccagg aggttctcac tcgcatccag gtgaggctgg gggagggctg gagtcagcat
360
tgccactccc agcatgcagt ggctcaggtt gccttgagtg attccgggca tctcccaggc
420
tcagctgctt ccataggccc ctgcctactc gtccggccct caggagcagc ctgacccacc
480
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533


<210> 4058
<211> 157
<212> PRT
<213> Homo sapiens

<400> 4058
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            20                  25                  30
Phe Ser Asn Ile Ser Ser Ile Tyr Gln Phe His Ser Gln Phe Phe Leu
            35                  40                  45
Pro Glu Leu Gln Arg Arg Leu Asp Asp Trp Thr Ala Asn Pro Arg Ile
        50                  55                  60
Gly Asp Val Ile Gln Lys Leu Ala Pro Phe Leu Lys Met Tyr Ser Glu
65                  70                  75                  80
Tyr Val Lys Asn Phe Glu Arg Ala Ala Glu Leu Leu Ala Thr Trp Thr
                85                  90                  95
Asp Lys Ser Pro Leu Phe Gln Glu Val Leu Thr Arg Ile Gln Val Arg
            100                 105                 110
Leu Gly Glu Gly Trp Ser Gln His Cys His Ser Gln His Ala Val Ala
        115                 120                 125
Gln Val Ala Leu Ser Asp Ser Gly His Leu Pro Gly Ser Ala Ala Ser
        130                 135                 140
Ile Gly Pro Cys Leu Leu Val Arg Pro Ser Gly Ala Ala
145                 150                 155


<210> 4059
<211> 3994
<212> DNA
<213> Homo sapiens
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<400> 4059

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120

tggcccccggt aggtccccgc aggcgggcag gagctccgag gccattggct ggcgcgcggg
180

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3245

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<212> PRT
<213> Homo sapiens

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            35   40   45
Arg Pro Gln Pro Gln Gln Leu Gly Ile Gln Gly Leu Gly Leu Asp Ser
        50   55   60
Gly Ser Trp Ser Trp Ala Gln Ala Leu Pro Pro Glu Glu Val Cys His
65   70   75   80
Gln Glu Pro Ala Leu Arg Gly Glu Met Ala Glu Gly Met Pro Pro Met
                85   90   95
Gln Ala Gln Glu Trp Asp Met Asp Ala Arg Arg Pro Met Pro Phe Gln
                100   105   110
Phe Pro Pro Phe Pro Asp Arg Ala Pro Val Phe Pro Asp Arg Met Met
            115   120   125
Arg Glu Pro Gln Leu Pro Thr Ala Glu Ile Ser Leu Trp Thr Val Val
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Ala Ala Ile Gln Ala Met Glu Arg Lys Ile Glu Ser Gln Ala Ala His

3246

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Asp Cys Glu Lys Thr Ala Val Glu Phe Gly Asn Gln Leu Glu Gly Lys
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Trp Ala Val Leu Gly Thr Leu Leu Gln Glu Tyr Gly Leu Leu Gln Arg
                195                    200                    205
Arg Leu Glu Asn Val Glu Asn Leu Leu Arg Asn Arg Asn Phe Trp Val
        210                    215                    220
Leu Arg Leu Pro Pro Gly Ser Lys Gly Glu Ala Pro Lys Val Pro Val
225                    230                    235                    240
Thr Phe Val Asp Ile Ala Val Tyr Phe Ser Glu Asp Glu Trp Lys Asn
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Leu Asp Glu Trp Gln Lys Glu Leu Tyr Asn Asn Leu Val Lys Glu Asn
                260                    265                    270
Tyr Lys Thr Leu Met Ser Leu Asp Ala Glu Gly Ser Val Pro Lys Pro
                275                    280                    285
Asp Ala Pro Val Gln Ala Glu Pro Arg Glu Glu Pro Cys Val Trp Glu
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Gln Arg His Pro Glu Glu Arg Glu Ile Pro Met Asp Pro Glu Ala Gly
305                    310                    315                    320
Ala Glu Pro Leu Val Pro Ala Gln Asp Ala Ser Ser Gln Val Lys Arg
                325                    330                    335
Glu Asp Thr Leu Cys Val Arg Gly Gln Arg Gly Leu Glu Glu Arg Ala
                340                    345                    350
Ile Pro Thr Glu Ser Ile Thr Val Asp Ser Pro Ile Ser Ala Gln Asp
                355                    360                    365
Leu Leu Ser Arg Ile Lys Gln Glu Glu His Gln Cys Val Trp Asp Gln
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Gln Asp Leu Ala Asp Arg Asp Ile Pro Thr Asp Pro Asn Ser Glu Ser
385                    390                    395                    400
Leu Ile Ser Ala His Asp Ile Leu Ser Trp Ile Lys Gln Glu Glu Gln
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Pro Tyr Pro Trp Gly Pro Arg Asp Ser Met Asp Gly Glu Leu Gly Leu
                420                    425                    430
Asp Ser Gly Pro Ser Asp Ser Leu Leu Met Val Lys Asn Pro Pro Pro
        435                    440                    445
Ala Pro Pro Gln Pro Gln Pro Gln Pro Gln Pro Gln Pro Gln Pro Gln Leu
        450                    455                    460
Gln Ser Gln Pro Gln Pro Gln Ser Leu Pro Pro Ile Ala Val Ala Glu
465                    470                    475                    480
Asn Pro Gly Gly Pro Pro Ser Arg Gly Leu Leu Asp Asp Gly Phe Gln
                485                    490                    495
Val Leu Pro Gly Glu Arg Gly Ser Gly Glu Ala Pro Pro Gly Gly Asp
        500                    505                    510
Arg Ser Thr Gly Gly Gly Gly Gly Asp Gly Gly Gly Gly Gly Gly Gly
        515                    520                    525
Ala Glu Ala Gly Thr Gly Ala Gly Gly Gly Cys Gly Ser Cys Cys Pro
        530                    535                    540
Gly Gly Leu Arg Arg Ser Leu Leu Leu His Gly Ala Arg Ser Lys Pro
545                    550                    555                    560
Tyr Ser Cys Pro Glu Cys Gly Lys Ser Phe Gly Val Arg Lys Ser Leu
                565                    570                    575
Ile Ile His His Arg Ser His Thr Lys Glu Arg Pro Tyr Glu Cys Ala
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Glu Cys Glu Lys Ser Phe Asn Cys His Ser Gly Leu Ile Arg His Gln
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Met Thr His Arg Gly Glu Arg Pro Tyr Lys Cys Ser Glu Cys Glu Lys
         610                     615                     620
Thr Tyr Ser Arg Lys Glu His Leu Gln Asn His Gln Arg Leu His Thr
625                     630                     635                     640
Gly Glu Arg Pro Phe Gln Cys Ala Leu Cys Gly Lys Ser Phe Ile Arg
                 645                     650                     655
Lys Gln Asn Leu Leu Lys His Gln Arg Ile His Thr Gly Glu Arg Pro
             660                     665                     670
Tyr Thr Cys Gly Glu Cys Gly Lys Ser Phe Arg Tyr Lys Glu Ser Leu
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Lys Asp His Leu Arg Val His Ser Gly Gly Pro Gly Pro Gly Ala Pro
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Arg Gln Leu Pro Pro Pro Pro Glu Arg Asp
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<210> 4061
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<212> DNA
<213> Homo sapiens

<400> 4061
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420
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<210> 4062
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<212> PRT
<213> Homo sapiens

<400> 4062
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                20                      25                      30
Glu Leu Ala Ala Ile Ile Pro Leu Val Val Lys Ser Val Lys Cys Ala
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              35                      40                      45
Thr Val Leu Ser Asp Ile Leu Arg Arg Cys Thr Leu Thr Thr Pro Gly
      50                      55                      60
Met Val Gly Leu His Gly Arg Arg Asn Ser Gly Lys Leu Met Ser Leu
65                      70                      75                      80
Asp Lys Ala Pro Leu Arg Gln Leu Leu Asp Ala Thr Ile Gly Ala Tyr
                  85                      90                      95
Ile Asn Thr Thr His Ser Arg Leu Thr His Ile Ser Pro Arg His Tyr
                  100                     105                     110
Ser Glu Phe Ile Glu Phe Leu Ser Lys Ala Arg Glu Thr Phe Leu Met
          115                     120                     125
Ala His Asp Gly His Ile Gln Phe Thr Gln Phe Ile Asp Asn Leu Lys
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Gln Ile Tyr Lys Gly Lys Lys Lys Leu Met Met Leu Val Arg Arg Glu
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Val Trp Leu Ile Asp
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<213> Homo sapiens

<400> 4063
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4137

3251

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<211> 818
<212> PRT
<213> Homo sapiens

<400> 4064
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Met Cys Cys Pro Ser Arg Ser Ser Ile Leu Thr Gly Lys Tyr Val His
        35   40   45
Asn His Asn Thr Tyr Thr Asn Asn Glu Asn Cys Ser Ser Pro Ser Trp
    50   55   60
Gln Ala Gln His Glu Ser Arg Thr Phe Ala Val Tyr Leu Asn Ser Thr
65   70   75   80
Gly Tyr Arg Thr Ala Phe Phe Gly Lys Tyr Leu Asn Glu Tyr Asn Gly
                85   90   95
Ser Tyr Val Pro Pro Gly Trp Lys Glu Trp Val Gly Leu Leu Lys Asn
                100   105   110
Ser Arg Phe Tyr Asn Tyr Thr Leu Cys Arg Asn Gly Val Lys Glu Lys
        115   120   125
His Gly Ser Asp Tyr Ser Lys Asp Tyr Leu Thr Asp Leu Ile Thr Asn
        130   135   140
Asp Ser Val Ser Phe Phe Arg Thr Ser Lys Lys Met Tyr Pro His Arg
145   150   155   160
Pro Val Leu Met Val Ile Ser His Ala Ala Pro His Gly Pro Glu Asp
                165   170   175
Ser Ala Pro Gln Tyr Ser Arg Leu Phe Pro Asn Ala Ser Gln His Ile
                180   185   190
Thr Pro Ser Tyr Asn Tyr Ala Pro Asp Pro Asp Lys His Trp Ile Met
                195   200   205
Arg Tyr Thr Gly Pro Met Lys Pro Ile His Met Glu Phe Thr Asn Met
210   215   220
Leu Gln Arg Lys Arg Leu Gln Thr Leu Met Ser Val Asp Asp Ser Met
225   230   235   240
Glu Thr Ile Tyr Asn Met Leu Val Glu Thr Gly Glu Leu Asp Asn Thr
                245   250   255
Tyr Ile Val Tyr Thr Ala Asp His Gly Tyr His Ile Gly Gln Phe Gly
                260   265   270
Leu Val Lys Gly Lys Ser Met Pro Tyr Glu Phe Asp Ile Arg Val Pro
        275   280   285
Phe Tyr Val Arg Gly Pro Asn Val Glu Ala Gly Cys Leu Asn Pro His
    290   295   300
Ile Val Leu Asn Ile Asp Leu Ala Pro Thr Ile Leu Asp Ile Ala Gly
305   310   315   320
Leu Asp Ile Pro Ala Asp Met Asp Gly Lys Ser Ile Leu Lys Leu Leu
                325   330   335
Asp Thr Glu Arg Pro Val Asn Arg Phe His Leu Lys Lys Lys Met Arg
                340   345   350
Val Trp Arg Asp Ser Phe Leu Val Glu Arg Gly Lys Leu Leu His Lys
        355   360   365
Arg Asp Asn Asp Lys Val Asp Ala Gln Glu Glu Asn Phe Leu Pro Lys

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Arg Ala Leu Ser Asn Leu Val Pro Lys Tyr Tyr Gly Gln Gly Ser Glu
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Ala Cys Thr Cys Asp Ser Gly Asp Tyr Lys Leu Ser Leu Ala Gly Arg
      450                        455                        460
Arg Lys Lys Xaa Leu Gln Glu Glu Xaa Tyr Lys Ala Ser Tyr Val Arg
465                        470                        475                        480
Asn Arg Ser Ile Arg Ser Val Ala Ile Glu Val Asp Gly Arg Val Tyr
                    485                        490                        495
His Val Gly Leu Gly Asp Ala Ala Gln Pro Arg Asn Leu Thr Lys Arg
                    500                        505                        510
His Trp Pro Gly Ala Pro Glu Asp Gln Asp Asp Lys Asp Gly Gly Asp
                    515                        520                        525
Xaa Ser Val Ala Leu Glu Ala Phe Pro Thr Thr Gln Pro Pro Thr Xaa
      530                        535                        540
Ile Lys Val Thr His Arg Cys Tyr Ile Leu Glu Asn Asp Thr Val Gln
545                        550                        555                        560
Cys Asp Leu Asp Leu Tyr Lys Ser Leu Gln Ala Trp Lys Asp His Lys
                    565                        570                        575
Leu His Ile Asp His Glu Ile Glu Thr Leu Gln Asn Lys Ile Lys Asn
                    580                        585                        590
Leu Arg Glu Val Arg Gly His Leu Lys Lys Lys Arg Pro Glu Glu Cys
                    595                        600                        605
Asp Cys His Lys Ile Ser Tyr His Thr Gln His Lys Gly Arg Leu Lys
      610                        615                        620
His Arg Gly Ser Ser Leu His Pro Phe Arg Lys Gly Leu Gln Glu Lys
625                        630                        635                        640
Asp Lys Val Trp Leu Leu Arg Glu Gln Lys Arg Lys Lys Lys Leu Arg
                    645                        650                        655
Lys Leu Leu Lys Arg Leu Gln Asn Asn Asp Thr Cys Ser Met Pro Gly
                    660                        665                        670
Leu Thr Cys Phe Thr His Asp Asn Gln His Trp Gln Thr Ala Pro Phe
                    675                        680                        685
Trp Thr Leu Gly Pro Phe Cys Ala Cys Thr Ser Ala Asn Asn Asn Thr
                    690                        695                        700
Tyr Trp Cys Met Arg Thr Ile Asn Glu Thr His Asn Phe Leu Phe Cys
705                        710                        715                        720
Glu Phe Ala Thr Gly Phe Leu Glu Tyr Phe Asp Leu Asn Thr Asp Pro
                    725                        730                        735
Tyr Gln Leu Met Asn Ala Val Asn Thr Leu Asp Arg Asp Val Leu Asn
                    740                        745                        750
Gln Leu His Val Gln Leu Met Glu Leu Arg Ser Cys Lys Gly Tyr Lys
                    755                        760                        765
Gln Cys Asn Pro Arg Thr Arg Asn Met Asp Leu Gly Leu Lys Asp Gly
      770                        775                        780
Gly Ser Tyr Glu Gln Tyr Arg Gln Phe Gln Arg Arg Lys Trp Pro Glu
785                        790                        795                        800
Met Lys Arg Pro Ser Ser Lys Ser Leu Gly Gln Leu Trp Glu Gly Trp
```

3253

```
                       805                    810                    815
Glu Gly


<210> 4065
<211> 696
<212> DNA
<213> Homo sapiens


<400> 4065
ngcgcgcccg ctgctcggtg gcaggagggc cggcggagcg ccatggcctg catcctgaag
60
agaaagtctg tgattgctgt gagcttcata gcagcgttcc ttttcctgct ggttgtgcgt
120
cttgtaaatg aagtgaattt cccattgcta ctaaactgct ttggacaacc tggtacaaag
180
tggataccat tctcctacac atacaggcgg ccccttcgaa ctcactatgg atacataaat
240
gtgaagacac aagagccttt gcaactggac tgtgaccttt gtgccatagt gtcaaactca
300
ggtcagatgg ttggccagaa ggtgggaaat gagatagatc gatcctcctg catttggaga
360
atgaacaatg cccccaccaa aggttatgaa gaagatgtcg ccgcatgac catgattcga
420
gttgtgtccc ataccagcgt tcctcttttg ctaaaaaacc ctgattattt tttcaaggaa
480
gcgaatacta ctatttatgt tatttgggga cctttccgca atatgaggaa agatggcaat
540
ggcatcgtnt acaacatgtt gaaaaagaca gttggtatct atccgaatgc ccaaatatac
600
gtgaccacag agaagcgcat gagttactgt gatggagttt taagaaggaa anctgggaag
660
gacagtacag agtgaccatg cagtgttgat tgatca
696


<210> 4066
<211> 210
<212> PRT
<213> Homo sapiens


<400> 4066
Met Ala Cys Ile Leu Lys Arg Lys Ser Val Ile Ala Val Ser Phe Ile
1               5                   10                  15
Ala Ala Phe Leu Phe Leu Leu Val Val Arg Leu Val Asn Glu Val Asn
            20                  25                  30
Phe Pro Leu Leu Leu Asn Cys Phe Gly Gln Pro Gly Thr Lys Trp Ile
        35                  40                  45
Pro Phe Ser Tyr Thr Tyr Arg Arg Pro Leu Arg Thr His Tyr Gly Tyr
    50                  55                  60
Ile Asn Val Lys Thr Gln Glu Pro Leu Gln Leu Asp Cys Asp Leu Cys
65                  70                  75                  80
Ala Ile Val Ser Asn Ser Gly Gln Met Val Gly Gln Lys Val Gly Asn
                85                  90                  95
Glu Ile Asp Arg Ser Ser Cys Ile Trp Arg Met Asn Asn Ala Pro Thr
```

```
            100                    105                    110
Lys Gly Tyr Glu Glu Asp Val Gly Arg Met Thr Met Ile Arg Val Val
        115                    120                    125
Ser His Thr Ser Val Pro Leu Leu Leu Lys Asn Pro Asp Tyr Phe Phe
    130                    135                    140
Lys Glu Ala Asn Thr Thr Ile Tyr Val Ile Trp Gly Pro Phe Arg Asn
145                    150                    155                    160
Met Arg Lys Asp Gly Asn Gly Ile Val Tyr Asn Met Leu Lys Lys Thr
                165                    170                    175
Val Gly Ile Tyr Pro Asn Ala Gln Ile Tyr Val Thr Thr Glu Lys Arg
            180                    185                    190
Met Ser Tyr Cys Asp Gly Val Leu Arg Arg Lys Xaa Gly Lys Asp Ser
        195                    200                    205
Thr Glu
    210
```

```
<210> 4067
<211> 1800
<212> DNA
<213> Homo sapiens
```

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<400> 4067
nnatctgatg agcttctttc ttctggcatc attaacggac cttttaccat gaatagttct
60
actccttcta cagctaatgg gaatgacagc aagaaattta acgagatag acctccctgt
120
tcgccttccc gtgttctcca tcttcgaaaa attccatgtg atgtcaccga agcagagatc
180
atatcattag gtctaccatt tggcaaagta actaatcttt tgatgttgaa aggaaaaagc
240
caggctttct tagaaatggc ttctgaggaa gctgccgtta ctatggtgaa ttattacact
300
cctattactc ctcaccttcg aagccagcct gtttatattc agtattccaa tcacagagaa
360
cttaagactg acaatctacc taatcaagct cgagcccaag ctgcactgca ggctgtcagt
420
gccgtccaat caggaagcct ggccctttct ggaggtcctt ccaatgaagg cacagtccta
480
cctgggcaga gccctgtgct tcgaataatt attgaaaacc tcttttaccc tgttaccctg
540
gaagttcttc atcagatatt ttctaaattt ggcacagtct tgaagattat cacctttaca
600
aagaataatc agtttcaagc cttgcttcag tatgctgacc cagtaaatgc acattatgcc
660
aaaatggctc tggatggcca gaatatctat aatgcatgct gcactctgcg cattgacttc
720
tccaagctca ccagccttaa tgtgaaatat aataatgaca aaagcagaga cttcactcgc
780
ttagaccttc ctactggtga tggccagcca tcccttgaac cccctatggc tgctgctttt
840
ggtgcaccgg gtataatttc ttcaccatat gcaggggctg ctggatttgc cccagccatt
900
ggatttcctc aagctacagg tctatcagtt ccagctgttc ctggagctct tggtcctctc
960
```

```
acaatcacct cttctgctgt cactggaagg atggccattc ctggggctag tggtatacca
1020
ggaaattctg ttctactcgt cacaaatctc aatcctgatc ttatcacacc acatgggctt
1080
tttatcctat ttggagtcta tggtgatgta catcgagtga agattatgtt taataagaaa
1140
gaaaatgcct tggttcagat ggcggatgca aatcaagctc agctagcaat gaaccatcta
1200
agtggtcaga dactttatgg gaaagtgctt cgtgctacac tgtccaaaca tcaagcagta
1260
cagcttcctc gagagggaca agaagaccaa ggtctgacta aggatttcag caatagtcct
1320
ttgcatcgct ttaaaaagcc gggctctaaa aacttccaga atatctttcc accatcagcc
1380
actctgcatc tttccaacat tccccttct gttacagtgg atgatctgaa gaacctttc
1440
atagaagctg gatgttcagt gaaggctttt aaattcttc agaaagatcg caaaatggcg
1500
ctcattcaat tgggatctgt ggaagaagca attcaggccc tcattgagct tcataaccat
1560
gaccttggag aaaatcacca cctcagagtt tccttctcaa aatctacaat ctgactttc
1620
tgtgaatttt tctcctaaaa ctggaccata atttcagtaa aaccttcaga catagactga
1680
agcagctcaa gaccaatttt gcctctttca caaaaataac tctttctgag tttgatattc
1740
aagtatattt taaaaatcaa gggatttttt ttttttgtat tcccctgca aaaaaaaaa
1800
```

```
<210> 4068
<211> 521
<212> PRT
<213> Homo sapiens
```

```
<400> 4068
Met Asn Ser Ser Thr Pro Ser Thr Ala Asn Gly Asn Asp Ser Lys Lys
 1               5                   10                  15
Phe Lys Arg Asp Arg Pro Pro Cys Ser Pro Ser Arg Val Leu His Leu
            20                  25                  30
Arg Lys Ile Pro Cys Asp Val Thr Glu Ala Glu Ile Ile Ser Leu Gly
            35                  40                  45
Leu Pro Phe Gly Lys Val Thr Asn Leu Leu Met Leu Lys Gly Lys Ser
        50                  55                  60
Gln Ala Phe Leu Glu Met Ala Ser Glu Glu Ala Ala Val Thr Met Val
65                  70                  75                  80
Asn Tyr Tyr Thr Pro Ile Thr Pro His Leu Arg Ser Gln Pro Val Tyr
                85                  90                  95
Ile Gln Tyr Ser Asn His Arg Glu Leu Lys Thr Asp Asn Leu Pro Asn
                100                 105                 110
Gln Ala Arg Ala Gln Ala Ala Leu Gln Ala Val Ser Ala Val Gln Ser
            115                 120                 125
Gly Ser Leu Ala Leu Ser Gly Gly Pro Ser Asn Glu Gly Thr Val Leu
            130                 135                 140
Pro Gly Gln Ser Pro Val Leu Arg Ile Ile Ile Glu Asn Leu Phe Tyr
```

3256

```
           145               150                 155               160
Pro Val Thr Leu Glu Val Leu His Gln Ile Phe Ser Lys Phe Gly Thr
               165               170               175
Val Leu Lys Ile Ile Thr Phe Thr Lys Asn Asn Gln Phe Gln Ala Leu
               180               185               190
Leu Gln Tyr Ala Asp Pro Val Asn Ala His Tyr Ala Lys Met Ala Leu
               195               200               205
Asp Gly Gln Asn Ile Tyr Asn Ala Cys Cys Thr Leu Arg Ile Asp Phe
           210               215               220
Ser Lys Leu Thr Ser Leu Asn Val Lys Tyr Asn Asn Asp Lys Ser Arg
225               230               235               240
Asp Phe Thr Arg Leu Asp Leu Pro Thr Gly Asp Gly Gln Pro Ser Leu
               245               250               255
Glu Pro Pro Met Ala Ala Ala Phe Gly Ala Pro Gly Ile Ile Ser Ser
               260               265               270
Pro Tyr Ala Gly Ala Ala Gly Phe Ala Pro Ala Ile Gly Phe Pro Gln
               275               280               285
Ala Thr Gly Leu Ser Val Pro Ala Val Pro Gly Ala Leu Gly Pro Leu
           290               295               300
Thr Ile Thr Ser Ser Ala Val Thr Gly Arg Met Ala Ile Pro Gly Ala
305               310               315               320
Ser Gly Ile Pro Gly Asn Ser Val Leu Leu Val Thr Asn Leu Asn Pro
               325               330               335
Asp Leu Ile Thr Pro His Gly Leu Phe Ile Leu Phe Gly Val Tyr Gly
               340               345               350
Asp Val His Arg Val Lys Ile Met Phe Asn Lys Lys Glu Asn Ala Leu
               355               360               365
Val Gln Met Ala Asp Ala Asn Gln Ala Gln Leu Ala Met Asn His Leu
           370               375               380
Ser Gly Gln Arg Leu Tyr Gly Lys Val Leu Arg Ala Thr Leu Ser Lys
385               390               395               400
His Gln Ala Val Gln Leu Pro Arg Glu Gly Gln Glu Asp Gln Gly Leu
               405               410               415
Thr Lys Asp Phe Ser Asn Ser Pro Leu His Arg Phe Lys Lys Pro Gly
               420               425               430
Ser Lys Asn Phe Gln Asn Ile Phe Pro Pro Ser Ala Thr Leu His Leu
               435               440               445
Ser Asn Ile Pro Pro Ser Val Thr Val Asp Asp Leu Lys Asn Leu Phe
           450               455               460
Ile Glu Ala Gly Cys Ser Val Lys Ala Phe Lys Phe Phe Gln Lys Asp
465               470               475               480
Arg Lys Met Ala Leu Ile Gln Leu Gly Ser Val Glu Glu Ala Ile Gln
               485               490               495
Ala Leu Ile Glu Leu His Asn His Asp Leu Gly Glu Asn His His Leu
           500               505               510
Arg Val Ser Phe Ser Lys Ser Thr Ile
               515               520
```

<210> 4069
<211> 714
<212> DNA
<213> Homo sapiens

<400> 4069

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agtaccatta taacgaattt tgagaggttg gtaaaaggag attggaaacc agaaggtgat
60
gaatggctga agatgtcata ccctgccaag gtaaccctgc tggggtcagt tatcttcaca
120
ttccagcaca cccagcatct ggcaatatca aagcataatc ttatgttcct ttataccatc
180
tttattgtgg ccacaaagat aaccatgatg actacacaga cttctactat gacatttgct
240
cctttgagg atacattgag ttggatgcta tttggctggc agcagccgtt ttcatcatgt
300
gagaagaaaa gtgaagcaaa gtcaccttcc aatggcgttg ggtcattggc ctcaaagccg
360
gtagatgttg cctcagataa tgttaaaaag aaacatacta agaagaatga ataaatttac
420
gtgatgagct ctacaaggcc aaaaattttt tttcttatct acctgttata ttgtgctaat
480
ttttctatgt atgtgatgtg aaatgaagac tatatatatg gaatggaggt gacagaaaga
540
aagaaattct ttgtttgagg gagacttccc ctttctggat tgtatttgta gagtgttacg
600
agtgtatcat gtgattatgc tttaccggta taagagattc tgttgtgatt atttgaatag
660
ttttatatta ataaagaag acaaaatttt ttaaatgtta aaaaaagcag atct
714
```

```
<210> 4070
<211> 113
<212> PRT
<213> Homo sapiens


<400> 4070
Met Ser Tyr Pro Ala Lys Val Thr Leu Leu Gly Ser Val Ile Phe Thr
1               5                   10                  15
Phe Gln His Thr Gln His Leu Ala Ile Ser Lys His Asn Leu Met Phe
            20                  25                  30
Leu Tyr Thr Ile Phe Ile Val Ala Thr Lys Ile Thr Met Met Thr Thr
        35                  40                  45
Gln Thr Ser Thr Met Thr Phe Ala Pro Phe Glu Asp Thr Leu Ser Trp
    50                  55                  60
Met Leu Phe Gly Trp Gln Gln Pro Phe Ser Ser Cys Glu Lys Lys Ser
65                  70                  75                  80
Glu Ala Lys Ser Pro Ser Asn Gly Val Gly Ser Leu Ala Ser Lys Pro
                85                  90                  95
Val Asp Val Ala Ser Asp Asn Val Lys Lys Lys His Thr Lys Lys Asn
            100                 105                 110
Glu


<210> 4071
<211> 601
<212> DNA
<213> Homo sapiens


<400> 4071
```

ggtcctggag gaggaaggcc tctggtgctc acttcaaagg catcgagaag aacttgttcc
60
cagacttgca gcggacttgc tcagtgtgca cgcgcagcag cacctcagca tcttcaaacc
120
catccacgat tgcctgtagt tcctgcaggc actgcccctc cagctggaga cgtgcatcac
180
ccacacacca ggccaggctg aggtggaaag aaggatcctg gtagaaagtg gtgaggttga
240
attcctccat gactctgtcc acctctgaaa ccaggtccag gaactgggca tgccctgaag
300
tgacctcaag cccaataaag gtcctggttt tctcttgatt ggtgtaaatc tttacctggt
360
tggcagtaaa gaagaatctg tggaaggagg tcatacgggc tttcagagcc tgcacgaagg
420
ggaggatcca gtggtggcgc agaaccacac tctgggacag gctgaggtgg aacaccttca
480
tccttaccag ccggggggacg agtgcgcacc ttcccccacg agcgaggcaa ctgggccacc
540
cacgtctatg taccatatga agccaaggag gagttcctgg atctgcttga tgtgttgctg
600
c
601

<210> 4072
<211> 175
<212> PRT
<213> Homo sapiens

<400> 4072
Met Val His Arg Arg Gly Trp Pro Ser Cys Leu Ala Arg Gly Gly Arg
 1   5   10   15
Cys Ala Leu Val Pro Arg Leu Val Arg Met Lys Val Phe His Leu Ser
            20   25   30
Leu Ser Gln Ser Val Val Leu Arg His His Trp Ile Leu Pro Phe Val
         35   40   45
Gln Ala Leu Lys Ala Arg Met Thr Ser Phe His Arg Phe Phe Phe Thr
      50   55   60
Ala Asn Gln Val Lys Ile Tyr Thr Asn Gln Glu Lys Thr Arg Thr Phe
65   70   75   80
Ile Gly Leu Glu Val Thr Ser Gly His Ala Gln Phe Leu Asp Leu Val
               85   90   95
Ser Glu Val Asp Arg Val Met Glu Glu Phe Asn Leu Thr Thr Phe Tyr
            100   105   110
Gln Asp Pro Ser Phe His Leu Ser Leu Ala Trp Cys Val Gly Asp Ala
         115   120   125
Arg Leu Gln Leu Glu Gly Gln Cys Leu Gln Glu Leu Gln Ala Ile Val
         130   135   140
Asp Gly Phe Glu Asp Ala Glu Val Leu Leu Arg Val His Thr Glu Gln
145   150   155   160
Val Arg Cys Lys Ser Gly Asn Lys Phe Phe Ser Met Pro Leu Lys
                  165   170   175

<210> 4073
<211> 1864

```
<212> DNA
<213> Homo sapiens

<400> 4073
nnacgcgtga aggggtgaa  ggggtgtcc  cggggacgg  gctgaacctc agtcaggacc
60
gcctgcaccg cagtccgggg atcgggtcga ggggagaaga aaaagggggtg ctcgggagca
120
gcccccggct acctcccctg gaggcacaga gggcgggggc cttggcgaat ggctttcttg
180
ctggccactt gcggagtgag tagaccccga gggtctggga gaggggccgg cccctacccc
240
tgagtccccg gggtcccggc cgccaggccg gagcgcgaat gtcgtgctca ccctgcctcc
300
ttcccgccgc cccctggggg tttggattca ggatttgttc ctagtgtcca agattttgat
360
aagaaactta cagaagctga tgcttaccta caaatcttga ttgaacaatt aaagcttttt
420
gatgacaagc ttcaaaactg caaagaagat gaacagagaa agaaaattga aactctcaaa
480
gagacaacaa atagcatggt agaatcaatt aaacactgca ttgtgttgct gcagattgcc
540
aaagaccaga gtaatgcgga gaagcacgca gatggaatga taagtactat taatcccgta
600
gatgcaatat atcaacctag tcctttggaa cctgtgatca gcacaatgcc ttcccagact
660
gtgttacctc cagaacctgt tcagttgtgt aagtcagagc agcgtccatc ttccctacca
720
gttggacctg tgttggctac cttgggacat catcagactc ctacaccaaa tagtacaggc
780
agtggccatt caccaccgag tagcagtctc acttctccaa gccacgtgaa cttgtctcca
840
aatacagtcc cagagttctc ttactccagc agtgaagatg aattttatga tgctgatgaa
900
ttccatcaaa gtggctcatc cccaaagcgc ttaatagatt cttctggatc tgcctcagtc
960
ctgacacaca gcagctcggg aaatagtcta aaacgcccag ataccacaga atcacttaat
1020
tcttccttgt ccaatggaac aagtgatgct gacctgtttg attcacatga tgacagagat
1080
gatgatgcgg aggcagggtc tgtggaggag cacaagagcg ttatcatgca tctcttgtcg
1140
caggttagac ttggaatgga tcttactaag gtagttcttc caacgtttat tcttgaaaga
1200
agatctcttt tagaaatgta tgcagacttt tttgcacatc cggacctgtt tgtgagcatt
1260
agtgaccaga aggatcccaa ggatcgaatg gttcaggttg tgaaatggta cctctcagcc
1320
tttcatgcgg gaaggaaagg atcagttgcc aaaaagccat acaatcccat tttgggcgag
1380
attttttcagt gtcattggac attaccaaat gatactgaag agaacacaga actagtttca
1440
gaaggaccag ttccctgggt ttccaaaaac agtgtaacat ttgtggctga gcaggtttcc
1500
```

catcatccac ccatttcagc cttttatgct gagtgtttta acaagaagat acaattcaat
1560
gctcatatct ggaccaaatc aaaattcctt gggatgtcaa ttggggtgca caacataggg
1620
cagggctgtg tctcatgtct agactatgat gaacattaca ttctcacatt ccccaatggc
1680
tatggaaggt ctatcctcac agtgccctgg gtggaattag gaggagaatg caatattaat
1740
tgttccaaaa caggctatag tgcaaatatc atcttccaca ctaaaccctt ctatgggggc
1800
aagaagcaca gaattactgc cgagattttt tctccaaatg acaagaagtc tttttgctca
1860
attg
1864

<210> 4074
<211> 456
<212> PRT
<213> Homo sapiens

<400> 4074
Met Val Glu Ser Ile Lys His Cys Ile Val Leu Leu Gln Ile Ala Lys
 1   5   10   15
Asp Gln Ser Asn Ala Glu Lys His Ala Asp Gly Met Ile Ser Thr Ile
            20   25   30
Asn Pro Val Asp Ala Ile Tyr Gln Pro Ser Pro Leu Glu Pro Val Ile
        35   40   45
Ser Thr Met Pro Ser Gln Thr Val Leu Pro Pro Glu Pro Val Gln Leu
    50   55   60
Cys Lys Ser Glu Gln Arg Pro Ser Ser Leu Pro Val Gly Pro Val Leu
65   70   75   80
Ala Thr Leu Gly His His Gln Thr Pro Thr Pro Asn Ser Thr Gly Ser
                85   90   95
Gly His Ser Pro Pro Ser Ser Ser Leu Thr Ser Pro Ser His Val Asn
            100   105   110
Leu Ser Pro Asn Thr Val Pro Glu Phe Ser Tyr Ser Ser Ser Glu Asp
        115   120   125
Glu Phe Tyr Asp Ala Asp Glu Phe His Gln Ser Gly Ser Ser Pro Lys
    130   135   140
Arg Leu Ile Asp Ser Ser Gly Ser Ala Ser Val Leu Thr His Ser Ser
145   150   155   160
Ser Gly Asn Ser Leu Lys Arg Pro Asp Thr Thr Glu Ser Leu Asn Ser
                165   170   175
Ser Leu Ser Asn Gly Thr Ser Asp Ala Asp Leu Phe Asp Ser His Asp
            180   185   190
Asp Arg Asp Asp Asp Ala Glu Ala Gly Ser Val Glu Glu His Lys Ser
            195   200   205
Val Ile Met His Leu Leu Ser Gln Val Arg Leu Gly Met Asp Leu Thr
    210   215   220
Lys Val Val Leu Pro Thr Phe Ile Leu Glu Arg Arg Ser Leu Leu Glu
225   230   235   240
Met Tyr Ala Asp Phe Phe Ala His Pro Asp Leu Phe Val Ser Ile Ser
                245   250   255
Asp Gln Lys Asp Pro Lys Asp Arg Met Val Gln Val Val Lys Trp Tyr

```
                  260                     265                     270
Leu Ser Ala Phe His Ala Gly Arg Lys Gly Ser Val Ala Lys Lys Pro
          275                     280                     285
Tyr Asn Pro Ile Leu Gly Glu Ile Phe Gln Cys His Trp Thr Leu Pro
      290                     295                     300
Asn Asp Thr Glu Glu Asn Thr Glu Leu Val Ser Glu Gly Pro Val Pro
305                     310                     315                     320
Trp Val Ser Lys Asn Ser Val Thr Phe Val Ala Glu Gln Val Ser His
                  325                     330                     335
His Pro Pro Ile Ser Ala Phe Tyr Ala Glu Cys Phe Asn Lys Lys Ile
              340                     345                     350
Gln Phe Asn Ala His Ile Trp Thr Lys Ser Lys Phe Leu Gly Met Ser
          355                     360                     365
Ile Gly Val His Asn Ile Gly Gln Gly Cys Val Ser Cys Leu Asp Tyr
      370                     375                     380
Asp Glu His Tyr Ile Leu Thr Phe Pro Asn Gly Tyr Gly Arg Ser Ile
385                     390                     395                     400
Leu Thr Val Pro Trp Val Glu Leu Gly Gly Glu Cys Asn Ile Asn Cys
                  405                     410                     415
Ser Lys Thr Gly Tyr Ser Ala Asn Ile Ile Phe His Thr Lys Pro Phe
              420                     425                     430
Tyr Gly Gly Lys Lys His Arg Ile Thr Ala Glu Ile Phe Ser Pro Asn
          435                     440                     445
Asp Lys Lys Ser Phe Cys Ser Ile
      450                     455
```

```
<210> 4075
<211> 2492
<212> DNA
<213> Homo sapiens

<400> 4075
ntgctggagg aggataacaa gttttgtgca gattgccagt ctaaagggcc gcgatgggcc
60
tcttggaaca ttggtgtgtt catctgcatt cgatgtgctg gaatccacag gaatctgggg
120
gtgcacatat ccagggtaaa gtcagttaac ctcgaccagt ggactcaaga acagattcag
180
tgcatgcaag agatgggaaa tggaaaggca aaccgacttt atgaagccta tcttcctgag
240
acctttcggc gacctcagat agacccagct gttgaaggat ttattcgaga caaatatgag
300
aagaagaaat acatggaccg aagtctggac atcaatgcct ttaggaaaga aaaagatgac
360
aagtggaaaa gagggagcga accagttcca gaaaaaaaat tggaacctgt tgttttgag
420
aaggtgaaaa tgccacagaa aaaagaagac ccacagctac ctcggaaaag ctccccgaaa
480
tccacagcgc ctgtcatgga tttgttgggc cttgatgctc ctgtggcctg ctccattgca
540
aatagtaaga ccagcaatac cctagagaag gatttagatc tgttggcctc tgttccatcc
600
ccttcttctt cgggttccag aaaggttgta ggttccatgc caactgcagg gagtgccggc
660
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tctgttcctg aaaatctgaa cctgtttccg gagccaggga gcaaatcaga agaaataggc
720
aagaaacagc tctctaaaga ctccattctt tcactgtatg gatcccagac gcctcaaatg
780
cctactcaag caatgttcat ggctcccgct cagatggcat atcccacagc ctaccccagc
840
ttccccgggg ttacacctcc taacagcata atggggagca tgatgcctcc accagtaggc
900
atggttgctc agccaggagc ttctgggatg gttgccccca tggccatgcc tgcaggctat
960
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1140
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2220
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2280
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2460
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2492

<210> 4076
<211> 410
<212> PRT
<213> Homo sapiens

<400> 4076
Xaa Leu Glu Glu Asp Asn Lys Phe Cys Ala Asp Cys Gln Ser Lys Gly
1   5   10   15
Pro Arg Trp Ala Ser Trp Asn Ile Gly Val Phe Ile Cys Ile Arg Cys
            20   25   30
Ala Gly Ile His Arg Asn Leu Gly Val His Ile Ser Arg Val Lys Ser
            35   40   45
Val Asn Leu Asp Gln Trp Thr Gln Glu Gln Ile Gln Cys Met Gln Glu
        50   55   60
Met Gly Asn Gly Lys Ala Asn Arg Leu Tyr Glu Ala Tyr Leu Pro Glu
65   70   75   80
Thr Phe Arg Arg Pro Gln Ile Asp Pro Ala Val Glu Gly Phe Ile Arg
                85   90   95
Asp Lys Tyr Glu Lys Lys Lys Tyr Met Asp Arg Ser Leu Asp Ile Asn
            100   105   110
Ala Phe Arg Lys Glu Lys Asp Asp Lys Trp Lys Arg Gly Ser Glu Pro
            115   120   125
Val Pro Glu Lys Lys Leu Glu Pro Val Val Phe Glu Lys Val Lys Met
        130   135   140
Pro Gln Lys Lys Glu Asp Pro Gln Leu Pro Arg Lys Ser Ser Pro Lys
145   150   155   160
Ser Thr Ala Pro Val Met Asp Leu Leu Gly Leu Asp Ala Pro Val Ala
                165   170   175
Cys Ser Ile Ala Asn Ser Lys Thr Ser Asn Thr Leu Glu Lys Asp Leu
                180   185   190
Asp Leu Leu Ala Ser Val Pro Ser Pro Ser Ser Ser Gly Ser Arg Lys
            195   200   205
Val Val Gly Ser Met Pro Thr Ala Gly Ser Ala Gly Ser Val Pro Glu
        210   215   220
Asn Leu Asn Leu Phe Pro Glu Pro Gly Ser Lys Ser Glu Glu Ile Gly
225   230   235   240
Lys Lys Gln Leu Ser Lys Asp Ser Ile Leu Ser Leu Tyr Gly Ser Gln
                245   250   255
Thr Pro Gln Met Pro Thr Gln Ala Met Phe Met Ala Pro Ala Gln Met
                260   265   270
Ala Tyr Pro Thr Ala Tyr Pro Ser Phe Pro Gly Val Thr Pro Pro Asn
            275   280   285
Ser Ile Met Gly Ser Met Met Pro Pro Pro Val Gly Met Val Ala Gln
        290   295   300
Pro Gly Ala Ser Gly Met Val Ala Pro Met Ala Met Pro Ala Gly Tyr

```
          305                      310                      315                      320
Met Gly Gly Met Gln Ala Ser Met Met Gly Val Pro Asn Gly Met Met
                        325                      330                      335
Thr Thr Gln Gln Ala Gly Tyr Met Ala Gly Met Ala Ala Met Pro Gln
                340                      345                      350
Thr Val Tyr Gly Val Gln Pro Ala Gln Gln Leu Gln Trp Asn Leu Thr
                355                      360                      365
Gln Met Thr Gln Gln Met Ala Gly Met Asn Phe Tyr Gly Ala Asn Gly
            370                      375                      380
Met Met Asn Tyr Gly Gln Ser Met Ser Gly Gly Asn Gly Gln Ala Ala
385                      390                      395                      400
Asn Gln Thr Leu Ser Pro Gln Met Trp Lys
                405                      410
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<210> 4077
<211> 684
<212> DNA
<213> Homo sapiens

<400> 4077
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120
agctacgtgg aggagctggt ggagattcgc aagctgcgcc aggacatcct gctcatgaag
180
ccgtacttca tcacctgcag ggaggccatg gaggctcgtc tgctgctgca gctccaggat
240
cggcagcatt ttgtggagaa cgacgagatg tactctgtcc aggacctcct ggacgtgcat
300
gccggccgcc tgggctgctc gctcaccgag atccacacgc tcttcgccaa gcacatcaag
360
ctggactgcg agcggtgcca ggccaagggc ttcgtgtgtg agctctgcag agagggcgac
420
gtgctgttcc gttcgacag ccacacgtct gtgtgcgccg actgctccgc ggtcttccac
480
agggactgct actacgacaa ctccaccact tgtcccaagt gtgcccggct cagcctgagg
540
aagcagtcgc tcttccagga gccaggtccc gatgtggagg cctagcgccg aggaacagtg
600
ctgggcaccc cgctctggcc agcaggacc caccctgcca acatcaagtt gttccttctg
660
ctccagaaac ccctggggtg cgca
684
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<210> 4078
<211> 194
<212> PRT
<213> Homo sapiens

<400> 4078
Arg Val Val His Asn Trp Asp Phe Glu Pro Arg Lys Val Ser Arg Cys
  1               5                      10                      15
Ser Met Arg Tyr Leu Ala Leu Met Val Ser Arg Pro Val Leu Arg Leu
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                 20                    25                    30
Arg Glu Ile Asn Pro Leu Leu Phe Ser Tyr Val Glu Glu Leu Val Glu
         35                    40                    45
Ile Arg Lys Leu Arg Gln Asp Ile Leu Leu Met Lys Pro Tyr Phe Ile
     50                    55                    60
Thr Cys Arg Glu Ala Met Glu Ala Arg Leu Leu Leu Gln Leu Gln Asp
65                    70                    75                    80
Arg Gln His Phe Val Glu Asn Asp Glu Met Tyr Ser Val Gln Asp Leu
                 85                    90                    95
Leu Asp Val His Ala Gly Arg Leu Gly Cys Ser Leu Thr Glu Ile His
             100                   105                   110
Thr Leu Phe Ala Lys His Ile Lys Leu Asp Cys Glu Arg Cys Gln Ala
         115                   120                   125
Lys Gly Phe Val Cys Glu Leu Cys Arg Glu Gly Asp Val Leu Phe Pro
         130                   135                   140
Phe Asp Ser His Thr Ser Val Cys Ala Asp Cys Ser Ala Val Phe His
145                   150                   155                   160
Arg Asp Cys Tyr Tyr Asp Asn Ser Thr Thr Cys Pro Lys Cys Ala Arg
                 165                   170                   175
Leu Ser Leu Arg Lys Gln Ser Leu Phe Gln Glu Pro Gly Pro Asp Val
             180                   185                   190
Glu Ala
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<210> 4079
<211> 783
<212> DNA
<213> Homo sapiens

<400> 4079
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120
atggccaggg ttgacctctg tagagggaca tccctcgtgt ttcccccagg actgaggaag
180
gttagaatgc agagttctct ccggagatgg ctgagctctc tttaggccca tccaccccctg
240
ctctcctggc tgtgcatgca aggcttctct gttagggcag tgcagcttgg agggtagaca
300
cactgagggt gtaagagcct gtgtgaacag ctcccatctg cagagcctcc tctccttaca
360
gatatatccc aaggcagggg tcccatattc cctgcggttc tgagctggca ttacctgcag
420
cagatggatc actggacagc gagtccggaa atcatccttc tccaccaagc tttcccactt
480
aatagcttgg taacctttga cagatgattt ctttctttcc taatttgtag catggggaca
540
gtgagggata caacagcagt ttctgaaaca gcagtgacca ccatttactg catttacccc
600
aggccaggca ctgtgtgtgg gcatggcatt taatcccggt aacactctat aagatagggg
660
ctgttatgac ctcatttctc cgatgaggaa gccagggctc agagaagttg aaggcatgag
720
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cccccgttgtt atgaagtcat tagatagtag agctggggat ttgaaccccca gaggcccact
780
nta
783

<210> 4080
<211> 101
<212> PRT
<213> Homo sapiens

<400> 4080
Met Pro Ala Gln Asn Arg Arg Glu Tyr Gly Thr Pro Ala Leu Gly Tyr
 1   5   10   15
Ile Cys Lys Glu Arg Arg Leu Cys Arg Trp Glu Leu Phe Thr Gln Ala
            20   25   30
Leu Thr Pro Ser Val Cys Leu Pro Ser Lys Leu His Cys Pro Asn Arg
        35   40   45
Glu Ala Leu His Ala Gln Pro Gly Glu Gln Gly Trp Met Gly Leu Lys
    50   55   60
Arg Ala Gln Pro Ser Pro Glu Arg Thr Leu His Ser Asn Leu Pro Gln
65   70   75   80
Ser Trp Gly Lys His Glu Gly Cys Pro Ser Thr Glu Val Asn Pro Gly
                85   90   95
His Ala Arg Thr Lys
            100

<210> 4081
<211> 645
<212> DNA
<213> Homo sapiens

<400> 4081
agaattcctc cctggatgga agtggtcctt atacccatga caggaaaacc aagtctgtac
60
ccaggattgt tcctttttac cactccttgt agactggtac ggcctgtgca gaacttagca
120
ttgggcaaag aagagctaat tggaactatg aacagatct tcatgaatgt cgctatcttt
180
gaggatgaag tttttgctgg agttaccaca caccaggaac tctttccaca cagcctgctg
240
agtgtgattg ccaacttcat cccttttctct gatcacaacc agagtccacg gaacatgtac
300
caatgccaga tgggtaagca aactatgggc tttccacttc tcacttatca agaccgatcg
360
gataacaaac tgtatcgtct tcagactcct cagagtccct tggtgagacc ctccatgtat
420
gattattatg acatggataa ctatccaatt gggaccaatg ccatcgttgc tgtgatttct
480
tacactggct atgatatgga agatgccatg attgtgaata aggcctcttg ggaacgaggc
540
tttgcccatg gaagtgtcta caagtctgag ttcatagacc tctctgaaaa aattaaacaa
600
ggagatagta gcctggtgtt tggcatcaaa cctggtgacc cacgc
645

3267

<210> 4082
<211> 215
<212> PRT
<213> Homo sapiens

<400> 4082
Arg Ile Pro Pro Trp Met Glu Val Val Leu Ile Pro Met Thr Gly Lys
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Pro Ser Leu Tyr Pro Gly Leu Phe Leu Phe Thr Thr Pro Cys Arg Leu
                20   25   30
Val Arg Pro Val Gln Asn Leu Ala Leu Gly Lys Glu Glu Leu Ile Gly
            35   40   45
Thr Met Glu Gln Ile Phe Met Asn Val Ala Ile Phe Glu Asp Glu Val
        50   55   60
Phe Ala Gly Val Thr Thr His Gln Glu Leu Phe Pro His Ser Leu Leu
65   70   75   80
Ser Val Ile Ala Asn Phe Ile Pro Phe Ser Asp His Asn Gln Ser Pro
                85   90   95
Arg Asn Met Tyr Gln Cys Gln Met Gly Lys Gln Thr Met Gly Phe Pro
            100   105   110
Leu Leu Thr Tyr Gln Asp Arg Ser Asp Asn Lys Leu Tyr Arg Leu Gln
            115   120   125
Thr Pro Gln Ser Pro Leu Val Arg Pro Ser Met Tyr Asp Tyr Tyr Asp
        130   135   140
Met Asp Asn Tyr Pro Ile Gly Thr Asn Ala Ile Val Ala Val Ile Ser
145   150   155   160
Tyr Thr Gly Tyr Asp Met Glu Asp Ala Met Ile Val Asn Lys Ala Ser
                165   170   175
Trp Glu Arg Gly Phe Ala His Gly Ser Val Tyr Lys Ser Glu Phe Ile
            180   185   190
Asp Leu Ser Glu Lys Ile Lys Gln Gly Asp Ser Ser Leu Val Phe Gly
            195   200   205
Ile Lys Pro Gly Asp Pro Arg
    210   215

<210> 4083
<211> 2983
<212> DNA
<213> Homo sapiens

<400> 4083
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120
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180
aaaactaaat gccttgaggg gaaggccgct gttcatttct tatctatttt gcctacacgg
240
tttcttgccc tcagtaagca tttaataaac ttttgttaaa catatgaatg aataattaaa
300
ttcaaaaata aattcttgac tgttttctcc catctctctc aaatgtttgc tctggaatat
360

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ggaaacagga tggcaagttt aaaacagatc tggatatgtg gcttcaggga cacatctgta
420
caaatctata tctcacaagt ggcaaagaga tacaaactcc attctttcct cctctgaatt
480
gttaatatct ctaaatctaa aggcaggcag caggtttctc tgagaacaca tgcaacctca
540
gctcaatgca gtgacagtgc taggataccc ggagagccag agctgtggga gggcagaggt
600
agaacaagag agggtctcag catcaggcca agacaaagcc ctacttacct ccttcttggg
660
aattcatgat gttcagggca aacagcattg cattggagaa cgtggttgcc tcttctttac
720
ttgcaaagtt taagccgtag acctggcggg catctcgcca ctggtggaag gttggcgtgg
780
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1980
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2760
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2820
gcctcacgca cgcgcgcacg tacacacact caggcttcag atcttgttga aagctgcgat
2880
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2983

<210> 4084
<211> 362
<212> PRT
<213> Homo sapiens

<400> 4084
Gln Asp Gln Gln Val Val Ile Asn Tyr Ser Ile Val Lys Gly Leu Lys
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Tyr Asn Gln Ala Thr Pro Thr Phe His Gln Trp Arg Asp Ala Arg Gln
              20   25   30
Val Tyr Gly Leu Asn Phe Ala Ser Lys Glu Glu Ala Thr Thr Phe Ser
           35   40   45
Asn Ala Met Leu Phe Ala Leu Asn Ile Met Asn Ser Gln Glu Gly Gly
        50   55   60
Pro Ser Ser Gln Arg Gln Val Gln Asn Gly Pro Ser Pro Asp Glu Met
65   70   75   80
Asp Ile Gln Arg Arg Gln Val Met Glu Gln His Gln Gln Gln Arg Gln
              85   90   95
Glu Ser Leu Glu Arg Arg Thr Ser Ala Thr Gly Pro Ile Leu Pro Pro

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                  100                    105                    110
Gly His Pro Ser Ser Ala Ala Ser Ala Pro Val Ser Cys Ser Gly Pro
          115                    120                    125
Pro Pro Pro Pro Pro Pro Pro Val Pro Pro Pro Pro Thr Gly Ala Thr
     130                    135                    140
Pro Pro Pro Pro Pro Pro Leu Pro Ala Gly Gly Ala Gln Gly Ser Ser
145                    150                    155                    160
His Asp Glu Ser Ser Met Ser Gly Leu Ala Ala Ala Ile Ala Gly Ala
                    165                    170                    175
Lys Leu Arg Arg Val Gln Arg Pro Glu Asp Ala Ser Gly Gly Ser Ser
          180                    185                    190
Pro Ser Gly Thr Ser Lys Ser Asp Ala Asn Arg Ala Ser Ser Gly Gly
     195                    200                    205
Gly Gly Gly Gly Leu Met Glu Glu Met Asn Lys Leu Leu Ala Lys Arg
     210                    215                    220
Arg Lys Ala Ala Ser Gln Ser Asp Lys Pro Ala Glu Lys Lys Glu Asp
225                    230                    235                    240
Glu Ser Gln Met Glu Asp Pro Ser Thr Ser Pro Ser Pro Gly Thr Arg
                    245                    250                    255
Ala Ala Ser Gln Pro Pro Asn Ser Ser Glu Ala Gly Arg Lys Pro Trp
          260                    265                    270
Glu Arg Ser Asn Ser Val Glu Lys Pro Val Ser Ser Ile Leu Ser Arg
          275                    280                    285
Thr Pro Ser Val Ala Lys Ser Pro Glu Ala Lys Ser Pro Leu Gln Ser
     290                    295                    300
Gln Pro His Ser Arg Met Lys Pro Ala Gly Ser Val Asn Asp Met Ala
305                    310                    315                    320
Leu Asp Ala Phe Asp Leu Asp Arg Met Lys Gln Glu Ile Leu Glu Glu
                    325                    330                    335
Val Val Arg Glu Leu His Lys Val Lys Glu Glu Ile Ile Asp Ala Ile
               340                    345                    350
Arg Gln Glu Leu Ser Gly Ile Ser Thr Thr
     355                    360
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<210> 4085
<211> 2673
<212> DNA
<213> Homo sapiens

<400> 4085
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240
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300
cccttccgga tccccttttgc tggcaaggtc gaggtgtgct gctttgacaa gacggggacg
360
ttgaccagtg acagcctggt ggtgcgcggt gtggccgggc tgagagacgg gaaggaggtg
420
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accccagtgt ccagcatccc tgtagaaaca caccgggccc tggcctcgtg ccactcgctc
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660
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720
gaaactctgc actccatgtt ctcccagtgc ccgcccgact accaccacat ccacaccgag
780
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caccagcagg cccgggaggt caagcgggag gccctggaat gcagcctcaa gtttgtgggc
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1680
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1800
gccaccctac aggggctgct gctggccggc tgcttcctct tcatctcccg ttccaagccc
1860
ctcaagaccc tctcccgaga acggccctg cccaacatct tcaacctgta caccatcctc
1920
accgtcatgc tccagttctt tgtgcacttc ctgagccttg tctacctgta ccgtgaggcc
1980
caggcccgga gccccnngag anagcaggag cagttcgtgg acttgtacaa ggagtttgag
2040
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3272

```
ccaagcctgg tcaacagcac cgtctacatc atggccatgg ccatgcagat ggccaccttc
2100
gccatcaatt acaaaggccc gcccttcatg gagagcctgc ccgagaacaa gcccctggtg
2160
tggagtctgg cagtttcact cctggccatc attggcctgc tcctcggctc ctcgcccgac
2220
ttcaacagcc agtttggcct cgtggacatc cctgtggagt tcaagctggt cattgcccag
2280
gtcctgctcc tggacttctg cctggcgctc ctggccgacc gcgtcctgca gttcttcctg
2340
gggaccccga agctgaaagt gccttcctga gatggcagtg ctggtaccca ctgcccaccc
2400
tggctgccgc tgggcgggaa ccccaacagg gccccgggag ggaaccctgc ccccaacccc
2460
ccacagcaag gctgtacagt ctcgcccttg gaagactgag ctgggacccc cacagccatc
2520
cgctggcttg gccagcagaa ccagccccaa gccagcacct ttggtaaata aagcagcatc
2580
tgagatttta aaaaaaaaaa aaaaaaaccc cggaaatttt tgaattggta aattcggaaa
2640
accccgatt tttcttttaa ctgttccctg ttt
2673


<210> 4086
<211> 789
<212> PRT
<213> Homo sapiens

<400> 4086
Gly Phe Asn Thr Ser Gln Gly Lys Leu Leu Arg Thr Ile Phe Phe Gly
1               5                   10                  15
Val Lys Arg Val Thr Ala Asn Asn Leu Glu Thr Phe Ile Phe Ile Leu
            20                  25                  30
Phe Leu Leu Val Phe Ala Ile Ala Ala Ala Ala Tyr Val Trp Ile Glu
        35                  40                  45
Gly Thr Lys Asp Pro Ser Arg Asn Arg Tyr Lys Leu Phe Leu Glu Cys
        50                  55                  60
Thr Leu Ile Leu Thr Ser Val Val Pro Pro Glu Leu Pro Ile Glu Leu
65                  70                  75                  80
Ser Leu Ala Val Asn Thr Ser Leu Ile Ala Leu Ala Lys Leu Tyr Met
                85                  90                  95
Tyr Cys Thr Glu Pro Phe Arg Ile Pro Phe Ala Gly Lys Val Glu Val
            100                 105                 110
Cys Cys Phe Asp Lys Thr Gly Thr Leu Thr Ser Asp Ser Leu Val Val
            115                 120                 125
Arg Gly Val Ala Gly Leu Arg Asp Gly Lys Glu Val Thr Pro Val Ser
        130                 135                 140
Ser Ile Pro Val Glu Thr His Arg Ala Leu Ala Ser Cys His Ser Leu
145                 150                 155                 160
Met Gln Leu Asp Asp Gly Thr Leu Val Gly Asp Pro Leu Glu Lys Ala
                165                 170                 175
Met Leu Thr Ala Val Asp Trp Thr Leu Thr Lys Asp Glu Lys Val Phe
                180                 185                 190
Pro Arg Ser Ile Lys Thr Gln Gly Leu Lys Ile His Gln Arg Phe His
```

```
            195                 200                 205
Phe Ala Ser Ala Leu Lys Arg Met Ser Val Leu Ala Ser Tyr Glu Lys
    210                 215                 220
Leu Gly Ser Thr Asp Leu Cys Tyr Ile Ala Ala Val Lys Gly Ala Pro
225                 230                 235                 240
Glu Thr Leu His Ser Met Phe Ser Gln Cys Pro Pro Asp Tyr His His
                245                 250                 255
Ile His Thr Glu Ile Ser Arg Glu Gly Ala Arg Val Leu Ala Leu Gly
                260                 265                 270
Tyr Lys Glu Leu Gly His Leu Thr His Gln Gln Ala Arg Glu Val Lys
            275                 280                 285
Arg Glu Ala Leu Glu Cys Ser Leu Lys Phe Val Gly Phe Ile Val Val
        290                 295                 300
Ser Cys Pro Leu Lys Ala Asp Ser Lys Ala Val Ile Arg Glu Ile Gln
305                 310                 315                 320
Asn Ala Ser His Arg Val Val Met Ile Thr Gly Asp Asn Pro Leu Thr
                325                 330                 335
Ala Cys His Val Ala Gln Glu Leu His Phe Ile Glu Lys Ala His Thr
                340                 345                 350
Leu Ile Leu Gln Pro Pro Ser Glu Lys Gly Arg Gln Cys Glu Trp Arg
            355                 360                 365
Ser Ile Asp Gly Ser Ile Val Leu Pro Leu Xaa Pro Gly Ala Pro Gln
    370                 375                 380
Arg His Trp Pro Trp Ser Thr His Xaa Cys Leu Thr Gly Asp Gly Leu
385                 390                 395                 400
Ala His Leu Gln Ala Thr Asp Pro Gln Gln Leu Leu Arg Leu Ile Pro
                405                 410                 415
His Val Gln Val Phe Ala Arg Val Ala Pro Lys Gln Lys Glu Phe Val
            420                 425                 430
Ile Thr Ser Leu Lys Glu Leu Gly Tyr Val Thr Leu Met Cys Gly Asp
            435                 440                 445
Gly Thr Asn Asp Val Gly Ala Leu Lys His Ala Asp Val Gly Val Ala
    450                 455                 460
Leu Leu Ala Asn Ala Pro Glu Arg Val Val Glu Arg Arg Arg Arg Pro
465                 470                 475                 480
Arg Asp Ser Pro Thr Leu Ser Asn Ser Gly Ile Arg Ala Thr Ser Arg
                485                 490                 495
Thr Ala Lys Gln Arg Ser Gly Leu Pro Pro Ser Glu Glu Gln Pro Thr
            500                 505                 510
Ser Gln Arg Asp Arg Leu Ser Gln Val Leu Arg Asp Leu Glu Asp Glu
        515                 520                 525
Ser Thr Pro Ile Val Lys Leu Gly Asp Ala Ser Ile Ala Ala Pro Phe
    530                 535                 540
Thr Ser Lys Leu Ser Ser Ile Gln Cys Ile Cys His Val Ile Lys Gln
545                 550                 555                 560
Gly Arg Cys Thr Leu Val Thr Thr Leu Gln Met Phe Lys Ile Leu Ala
                565                 570                 575
Leu Asn Ala Leu Ile Leu Ala Tyr Ser Gln Ser Val Leu Tyr Leu Glu
                580                 585                 590
Gly Val Lys Phe Ser Asp Phe Gln Ala Thr Leu Gln Gly Leu Leu Leu
            595                 600                 605
Ala Gly Cys Phe Leu Phe Ile Ser Arg Ser Lys Pro Leu Lys Thr Leu
        610                 615                 620
Ser Arg Glu Arg Pro Leu Pro Asn Ile Phe Asn Leu Tyr Thr Ile Leu
```

```
625                 630                 635                 640
Thr Val Met Leu Gln Phe Phe Val His Phe Leu Ser Leu Val Tyr Leu
                645                 650                 655
Tyr Arg Glu Ala Gln Ala Arg Ser Pro Xaa Arg Xaa Gln Glu Gln Phe
            660                 665                 670
Val Asp Leu Tyr Lys Glu Phe Glu Pro Ser Leu Val Asn Ser Thr Val
        675                 680                 685
Tyr Ile Met Ala Met Ala Met Gln Met Ala Thr Phe Ala Ile Asn Tyr
        690                 695                 700
Lys Gly Pro Pro Phe Met Glu Ser Leu Pro Glu Asn Lys Pro Leu Val
705                 710                 715                 720
Trp Ser Leu Ala Val Ser Leu Leu Ala Ile Ile Gly Leu Leu Leu Gly
                725                 730                 735
Ser Ser Pro Asp Phe Asn Ser Gln Phe Gly Leu Val Asp Ile Pro Val
            740                 745                 750
Glu Phe Lys Leu Val Ile Ala Gln Val Leu Leu Leu Asp Phe Cys Leu
        755                 760                 765
Ala Leu Leu Ala Asp Arg Val Leu Gln Phe Phe Leu Gly Thr Pro Lys
    770                 775                 780
Leu Lys Val Pro Ser
785


<210> 4087
<211> 959
<212> DNA
<213> Homo sapiens

<400> 4087
aggggaagtc tggagaaggc attgtttcaa ttattaaaag tgtgggggca gtgggcggaa
60
caaacgcgcc gactacagag gctggacgta agcttagcgg tggcgcgcgt gcgcagcgcc
120
ggcccgagtt gccaaaacaa aggggatttg gtgatggagg ctttgttaga aggaatacaa
180
aatcgagggc atggtggggg attttttgaca tcttgcgaag cagaactaca ggagctcatg
240
aaacagattg acataatggt ggctcataaa aaatctgaat gggaaggacg tacacatgct
300
ctagaaactt gcttgaaaat ccgtgaacag gaacttaaga gtcttaggag tcagttggat
360
gtgacacata aggaggttgg aatgttgcat cagcaggtag aagaacatga aaaaatcaag
420
caagagatga ccatggaata taagcaggag ttgaagaaac tacatgaaga attatgcata
480
ctgaagagaa gctatgaaaa gcttcagaaa aagcaaatga gggaattcag aggaaatacc
540
aaaaatcaca gggaagatcg gtctgaaatt gagaggttaa ctgcaaaaat agaggaattc
600
cgtcagaaat cgctggactg ggagaagcaa cgcttgattt atcagcaaca ggtatcttca
660
ctggaggcac aaaggaaggc tctggctgaa caatcagaga taattcaggc tcagcttgtc
720
aatcggaaac agaaattaga gtctgtggaa ctttctagcc aatcagaaat tcaacactta
780
```

```
agcagtaaac tggagcgggc taatgacact atctgtgcca atgagttgga aatagagcgc
840
ctcaccatga gggtcaatga cttggttgga accagtatga ctgtcctaca ggagcagcag
900
caaaaagaag aaaaattgag ggaatctgaa aaactattag aggctctgca ggaaaaaaa
959
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```
<210> 4088
<211> 319
<212> PRT
<213> Homo sapiens
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```
<400> 4088
Arg Gly Ser Leu Glu Lys Ala Leu Phe Gln Leu Leu Lys Val Trp Gly
 1               5                  10                  15
Gln Trp Ala Glu Gln Thr Arg Arg Leu Gln Arg Leu Asp Val Ser Leu
                20                  25                  30
Ala Val Ala Arg Val Arg Ser Ala Gly Pro Ser Cys Gln Asn Lys Gly
        35                  40                  45
Asp Leu Val Met Glu Ala Leu Leu Glu Gly Ile Gln Asn Arg Gly His
     50                  55                  60
Gly Gly Gly Phe Leu Thr Ser Cys Glu Ala Glu Leu Gln Glu Leu Met
65                  70                  75                  80
Lys Gln Ile Asp Ile Met Val Ala His Lys Lys Ser Glu Trp Glu Gly
                85                  90                  95
Arg Thr His Ala Leu Glu Thr Cys Leu Lys Ile Arg Glu Gln Glu Leu
                100                 105                 110
Lys Ser Leu Arg Ser Gln Leu Asp Val Thr His Lys Glu Val Gly Met
        115                 120                 125
Leu His Gln Gln Val Glu Glu His Glu Lys Ile Lys Gln Glu Met Thr
        130                 135                 140
Met Glu Tyr Lys Gln Glu Leu Lys Lys Leu His Glu Glu Leu Cys Ile
145                 150                 155                 160
Leu Lys Arg Ser Tyr Glu Lys Leu Gln Lys Lys Gln Met Arg Glu Phe
                165                 170                 175
Arg Gly Asn Thr Lys Asn His Arg Glu Asp Arg Ser Glu Ile Glu Arg
                180                 185                 190
Leu Thr Ala Lys Ile Glu Glu Phe Arg Gln Lys Ser Leu Asp Trp Glu
        195                 200                 205
Lys Gln Arg Leu Ile Tyr Gln Gln Gln Val Ser Ser Leu Glu Ala Gln
     210                 215                 220
Arg Lys Ala Leu Ala Glu Gln Ser Glu Ile Ile Gln Ala Gln Leu Val
225                 230                 235                 240
Asn Arg Lys Gln Lys Leu Glu Ser Val Glu Leu Ser Ser Gln Ser Glu
                245                 250                 255
Ile Gln His Leu Ser Ser Lys Leu Glu Arg Ala Asn Asp Thr Ile Cys
                260                 265                 270
Ala Asn Glu Leu Glu Ile Glu Arg Leu Thr Met Arg Val Asn Asp Leu
        275                 280                 285
Val Gly Thr Ser Met Thr Val Leu Gln Glu Gln Gln Gln Lys Glu Glu
        290                 295                 300
Lys Leu Arg Glu Ser Glu Lys Leu Leu Glu Ala Leu Gln Glu Lys
305                 310                 315
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3276

<210> 4089
<211> 511
<212> DNA
<213> Homo sapiens

<400> 4089
accggtctcc gcgtcttggt ggtagtggtc ccctgggccc agctgtcttt tcttttacct
60
ctttgtcttg cgtctttatt tctatgttct cttgtctctg cacatgggga gaaacccacc
120
aaccctgtgg ggctggcccc tacacagttt ttaaggggta cagggaaggg aagaaacagg
180
caccatgtgg ggcaggggtt ctgcttctat catatttcca ttttgttgtt ttaggagatc
240
cttccaactc tcactaacat tattttccag agaacaaaag aaaaactatg ctctccaaga
300
acatgtttcc tttgtaattt ttctgtcctc aaacttttc tggagagatg agtcatttga
360
cctgacattg agaataggct tgaagccctt tgagaggaca aaggagatag agtcagcatt
420
cctatctcca tgctctgaag atccaagtca cttggttact gctccctggg ctgtctattt
480
tcactgttta tggaagatag agtacacctg t
511

<210> 4090
<211> 109
<212> PRT
<213> Homo sapiens

<400> 4090
Met Trp Gly Arg Gly Ser Ala Ser Ile Ile Phe Pro Phe Cys Cys Phe
1   5   10   15
Arg Arg Ser Phe Gln Leu Ser Leu Thr Leu Phe Ser Arg Glu Gln Lys
            20   25   30
Lys Asn Tyr Ala Leu Gln Glu His Val Ser Phe Val Ile Phe Leu Ser
        35   40   45
Ser Asn Phe Phe Trp Arg Asp Glu Ser Phe Asp Leu Thr Leu Arg Ile
    50   55   60
Gly Leu Lys Pro Phe Glu Arg Thr Lys Glu Ile Glu Ser Ala Phe Leu
65   70   75   80
Ser Pro Cys Ser Glu Asp Pro Ser His Leu Val Thr Ala Pro Trp Ala
                85   90   95
Val Tyr Phe His Cys Leu Trp Lys Ile Glu Tyr Thr Cys
                100   105

<210> 4091
<211> 1526
<212> DNA
<213> Homo sapiens

<400> 4091
cacggcggct acaccggcag cggaccgggc tttggagaac ctcgggactc aggtgctgag
60

gtgcccagcg gctccggacg tgctacgggg tgcgagcgcg ggggagttcg gggcgcacga
120
caaggaaggg cccccgggag ctctatatgg aggaaggagc ccagaatggt gtgcaccagg
180
aagaccaaaa ctttggtgtc cacttgcgtg atcctgagcg gcatgactaa catcatctgc
240
ctgctctacg tgggctgggt caccaactac atcgccagcg tgtatgtgcg ggggcaggag
300
ccggcgcccg acaagaagct ggaggaagac aaagggggaca ctctgaagat tattgagcgg
360
ctggaccacc tggagaatgt catcaagcag cacattcaag gctataggag aaatttctcc
420
cttctgaatg tgtccaacta actctgttca cctgagaaat catattcccc agctctgggt
480
atccctgaat aaccacagga gaacagttcc aggccctgat aagtcagcta ttgcaagggg
540
gacctggctg gaagatatga aggaaaaata tcattcttga actaataagt tgagagatca
600
cagccttcag gggaccagaa gggaaggctg aacagagaag ggcaatttca cgttcgccat
660
gtccatattt ctatcgtcat gagccatctc accttacagg cagggaagtt ttgagcttag
720
agaatgggat gcgtcaagaa aaccgtggct cccccagctc tgttcctgga ttcagtgcct
780
gttgtttcat cctgtgtaga ctggagtcag ggtctacaca gttggaattc tatggaacca
840
agatgctgtg tggcagatgg atgtggactc caactgtgac aatccagaag gccttgggga
900
cttgtttcat gaacagctcc ctgtaggatc tctgttgggg tgggggattc tagggggcatc
960
tccgcagttt tcttctgaaa acaaaacgaa tacaagttgg gcaggtgcaa caactgtgca
1020
tgcagtcccc tcccagggct ggctagcagt attgttgggt accgtaagca cttagcattg
1080
ttaagtgagc ataagtaaca agatgcaaca gcctctggcc aagttttgaa gattttgttt
1140
taaagtatgc ttttagatgt tgacattcat gattattaaa aggaacaaaa ctcaatttgg
1200
ggtctcaaga gccacaattc tagacttcta ggatgtcagg agccatgctc ttaagcttct
1260
caccctgctg ttttaatgag attaatgatt attttccact gagcacctac ctgtgatgtt
1320
cataaaaaag tgaaataaat gactcacatg gagatttgga aggatatcac tgtggaaagt
1380
agatgttaac agcctctaga aatatgataa ttatcagcta tttgagatgc agtcactgta
1440
atgtgataac aagatgtgtt gtgcaggtag aaagcatgga gagaaatggc acaaagtaga
1500
gttataagaa aaaaaaaaaa aaaaaa
1526

<210> 4092
<211> 146
<212> PRT

3278

<213> Homo sapiens

<400> 4092
His Gly Gly Tyr Thr Gly Ser Gly Pro Gly Phe Gly Glu Pro Arg Asp
1   5   10   15
Ser Gly Ala Glu Val Pro Ser Gly Ser Gly Arg Ala Thr Gly Cys Glu
            20   25   30
Arg Gly Gly Val Arg Gly Ala Arg Gln Gly Arg Ala Pro Gly Ser Ser
        35   40   45
Ile Trp Arg Lys Glu Pro Arg Met Val Cys Thr Arg Lys Thr Lys Thr
    50   55   60
Leu Val Ser Thr Cys Val Ile Leu Ser Gly Met Thr Asn Ile Ile Cys
65   70   75   80
Leu Leu Tyr Val Gly Trp Val Thr Asn Tyr Ile Ala Ser Val Tyr Val
                85   90   95
Arg Gly Gln Glu Pro Ala Pro Asp Lys Lys Leu Glu Glu Asp Lys Gly
                100   105   110
Asp Thr Leu Lys Ile Ile Glu Arg Leu Asp His Leu Glu Asn Val Ile
            115   120   125
Lys Gln His Ile Gln Gly Tyr Arg Arg Asn Phe Ser Leu Leu Asn Val
    130   135   140
Ser Asn
145

<210> 4093
<211> 1519
<212> DNA
<213> Homo sapiens

<400> 4093
nngggccgcg gccggcagaa gggctgttag gagggaccac gcgccggggg cgcgatctct
60
ggcagggggc ggtgtgcagc ggaaccatgc acataggcgc ccacgccgac tacccctccc
120
gaggaaaaga ggccgggggcg cgctgggggg tgagagcatg agggaggccg ggggggggctg
180
cttggagcgc tgctagggag cggtgccgcc gcacacccgc ctgggcgcgg cggagggcgg
240
ggagcgggca ggtcgcgcct cggcgcagcg accgccggga gctgttctga tttccgacgc
300
gcacctaggg gcccggagca gcccccgccc cggcgcgccg ccgacatggg caacgcaggg
360
agcatggatt cgcagcagac cgatttcagg gcgcacaacg tgcctttgaa gctgccgatg
420
ccagagccag gtgaactgga ggagcgattt gccatcgtgc tgaacgctat gaacctacct
480
cctgacaaag ccaggttact gcggcagtat gataatgaga aaaaatggga actgatttgt
540
gatcaggaac gattccaggt gaagaatcct ccccatacat acattcaaaa gctcaaaggc
600
tatctggatc cagctgtaac caggaagaaa ttcagacggc gtgttcaaga atctacacaa
660
gtgctaagag aactggaaat ttctttaaga actaaccaca ttggatgggt cagagaattt
720

ctgaatgaag aaaacaaagg tcttgatgtt ctagtggaat atctctcatt tgcacagtac
780

gcggtaactt ttgactttga aagtgtggag agtactgtgg agagctcggt ggacaaatca
840

aagccctgga gtaggtccat cgaggacctg cacagaggga gcaacctgcc ctcacctgtg
900

ggcaacagtg tctcccgctc tggaagacat tctgcactgc gatataatac attgccaagc
960

agaagaactc tgaaaaattc aagattagtg agtaagaaag atgatgtgca tgtctgtatc
1020

atgtgtttac gtgccatcat gaattatcag tatggtttca catggtcat gtctcatcca
1080

cacgctgtca atgagattgc actaagcctg aacaacaaga tcccagaac aaaagccctt
1140

gtcttagaac tgttggcagc cgtttgtctt gtcagaggcg ggcatgaaat catttatatca
1200

gcatttgata actttaaaga ggtttgtgga gaaaaacagc gctttgagaa gttgatggaa
1260

catttcagga atgaagacaa taacatagat tttatggtgg cttctatgca gtttattaat
1320

attgtagtcc attcagtaga agatatgaat ttcagagttc acctgcagta tgaatttacc
1380

aaattaggcc tggacgaata cttggacaag ctgaaacaca ctgagagtga caagcttcaa
1440

gtccagatcc aggcttacct ggacaatgtt tttgatgtag gagctctact ggaagatgct
1500

gaaactaaga atgctgcag
1519

<210> 4094
<211> 391
<212> PRT
<213> Homo sapiens

<400> 4094
Met Gly Asn Ala Gly Ser Met Asp Ser Gln Gln Thr Asp Phe Arg Ala
 1   5   10   15
His Asn Val Pro Leu Lys Leu Pro Met Pro Glu Pro Gly Glu Leu Glu
            20   25   30
Glu Arg Phe Ala Ile Val Leu Asn Ala Met Asn Leu Pro Pro Asp Lys
        35   40   45
Ala Arg Leu Leu Arg Gln Tyr Asp Asn Glu Lys Lys Trp Glu Leu Ile
    50   55   60
Cys Asp Gln Glu Arg Phe Gln Val Lys Asn Pro Pro His Thr Tyr Ile
65   70   75   80
Gln Lys Leu Lys Gly Tyr Leu Asp Pro Ala Val Thr Arg Lys Lys Phe
                85   90   95
Arg Arg Arg Val Gln Glu Ser Thr Gln Val Leu Arg Glu Leu Glu Ile
            100   105   110
Ser Leu Arg Thr Asn His Ile Gly Trp Val Arg Glu Phe Leu Asn Glu
            115   120   125
Glu Asn Lys Gly Leu Asp Val Leu Val Glu Tyr Leu Ser Phe Ala Gln
        130   135   140
Tyr Ala Val Thr Phe Asp Phe Glu Ser Val Glu Ser Thr Val Glu Ser

3280

```
         145                      150                      155                      160
Ser Val Asp Lys Ser Lys Pro Trp Ser Arg Ser Ile Glu Asp Leu His
                 165                      170                      175
Arg Gly Ser Asn Leu Pro Ser Pro Val Gly Asn Ser Val Ser Arg Ser
                 180                      185                      190
Gly Arg His Ser Ala Leu Arg Tyr Asn Thr Leu Pro Ser Arg Arg Thr
                 195                      200                      205
Leu Lys Asn Ser Arg Leu Val Ser Lys Lys Asp Asp Val His Val Cys
         210                      215                      220
Ile Met Cys Leu Arg Ala Ile Met Asn Tyr Gln Tyr Gly Phe Asn Met
225                      230                      235                      240
Val Met Ser His Pro His Ala Val Asn Glu Ile Ala Leu Ser Leu Asn
                 245                      250                      255
Asn Lys Asn Pro Arg Thr Lys Ala Leu Val Leu Glu Leu Leu Ala Ala
                 260                      265                      270
Val Cys Leu Val Arg Gly Gly His Glu Ile Ile Leu Ser Ala Phe Asp
                 275                      280                      285
Asn Phe Lys Glu Val Cys Gly Glu Lys Gln Arg Phe Glu Lys Leu Met
         290                      295                      300
Glu His Phe Arg Asn Glu Asp Asn Asn Ile Asp Phe Met Val Ala Ser
305                      310                      315                      320
Met Gln Phe Ile Asn Ile Val Val His Ser Val Glu Asp Met Asn Phe
                 325                      330                      335
Arg Val His Leu Gln Tyr Glu Phe Thr Lys Leu Gly Leu Asp Glu Tyr
                 340                      345                      350
Leu Asp Lys Leu Lys His Thr Glu Ser Asp Lys Leu Gln Val Gln Ile
                 355                      360                      365
Gln Ala Tyr Leu Asp Asn Val Phe Asp Val Gly Ala Leu Leu Glu Asp
         370                      375                      380
Ala Glu Thr Lys Asn Ala Ala
385                      390
```

```
<210> 4095
<211> 253
<212> DNA
<213> Homo sapiens
```

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<400> 4095
ccatgggggg tggggagcag gcctcagcag ggcgggttcc caaaagacag cccagagagc
60
agggtcagat agtggggggt gggttcagct ccactgtcca ggtgaggaaa ctgaggctga
120
agagagatca agtagcatcc ccagcgaaat ctgaggcctc tggaggcgcc tgtgcacgtg
180
tgtctggaag tgtgtgtcca ggcagcatat ctgcatgtgt gtgcctgtcc agacagcata
240
tctgtgcacg cgt
253
```

```
<210> 4096
<211> 83
<212> PRT
<213> Homo sapiens
```

<400> 4096
Met Gly Gly Gly Glu Gln Ala Ser Ala Gly Arg Val Pro Lys Arg Gln
1   5   10   15
Pro Arg Glu Gln Gly Gln Ile Val Gly Gly Gly Phe Ser Ser Thr Val
            20   25   30
Gln Val Arg Lys Leu Arg Leu Lys Arg Asp Gln Val Ala Ser Pro Ala
        35   40   45
Lys Ser Glu Ala Ser Gly Gly Ala Cys Ala Arg Val Ser Gly Ser Val
    50   55   60
Cys Pro Gly Ser Ile Ser Ala Cys Val Cys Leu Ser Arg Gln His Ile
65   70   75   80
Cys Ala Arg

<210> 4097
<211> 1385
<212> DNA
<213> Homo sapiens

<400> 4097
tccggagccc ggagcccgga gccccgcgcg gggcagcccc ccggggagga gcctcgtgct
60
ctgggacgcg tgccgcgcac tggcacggca ggggcgcgag ccaggctgca cgattcactg
120
cgtgctgtcc tcacttgttc tacaatgagt gccaaatctg ctatcagcaa ggaaattttt
180
gcacctcttg atgaaaggat gctgggagct gtccaagtca agaggaggac aaagaaaaag
240
attcctttct tggcaactgg aggtcaaggc gaatatttaa cttatatctg cctgtcagtg
300
acaaacaaga aacccacaca ggcgtccatc acaaaggtca aacagtttga aggctccaca
360
tcatttgttc ggagatcaca gtggatgctc gagcagcttc gccaggttaa tggtatcgat
420
cctaatgggg attcggcaga gtttgatttg ttgtttgaaa atgcttttga ccagtgggta
480
gccagcacag cgtcagaaaa atgcaccttc ttccagatcc tccaccatac ctgccagagg
540
tacctcacgg acaggaagcc agagtttatt aactgccaat ccaaaattat gggaggaaac
600
agcatcctcc attcagctgc tgacagcgtg accagcgcag tgcagaaggc aagccaggcc
660
ttgaatgagc gtggagagcg attaggccga gcagaggaga gacagaaga cctgaagaac
720
agcgcccagc agtttgcaga aactgcgcac aagcttgcca tgaagcacaa atgttgagaa
780
actgcctatc ctggtgactc ttcttaagag aaactgaaga gtttgttcag cagtttttac
840
aagaattcgg gacctccgct tgcttctttt tttccaatat ttggacactt agagtggttt
900
ttgttttttc ttttcagatg ttaatgtgaa agaaagggtg ttgcattttt acatttccct
960
aatgatcttg ctaataaatg ctacaatagc atcagcttca ttttgggttt ttgcctcctc
1020

3282

ccactgtgtg tatgtgtgta tatgtatgtt ttgaatatgt tttctttatt aaaaaatatt
1080
ttttgtagtt tgaatatgaa atttggacca aatgataaac tgcgctgagt ctaaactggc
1140
aacatgtatt tttttctctg atattaagca ggaaggcatt ttaatgtggt gacatcagat
1200
gttattttc ctagatgaaa ataaaagtca agcagtgatt agtttcactc actgtcctag
1260
ctacacttaa tttgaagatt aaaattctac attgtggaaa acaattgaat ttattgggaa
1320
aaacagcagt cttagatttt gctccttgca tagtaatctt ttgcatgaac catcaccagc
1380
gttca
1385

<210> 4098
<211> 258
<212> PRT
<213> Homo sapiens

<400> 4098
Ser Gly Ala Arg Ser Pro Glu Pro Arg Ala Gly Gln Pro Pro Gly Glu
 1   5   10   15
Glu Pro Arg Ala Leu Gly Arg Val Pro Arg Thr Gly Thr Ala Gly Ala
            20   25   30
Arg Ala Arg Leu His Asp Ser Leu Arg Ala Val Leu Thr Cys Ser Thr
            35   40   45
Met Ser Ala Lys Ser Ala Ile Ser Lys Glu Ile Phe Ala Pro Leu Asp
            50   55   60
Glu Arg Met Leu Gly Ala Val Gln Val Lys Arg Arg Thr Lys Lys Lys
65   70   75   80
Ile Pro Phe Leu Ala Thr Gly Gly Gln Gly Glu Tyr Leu Thr Tyr Ile
                85   90   95
Cys Leu Ser Val Thr Asn Lys Lys Pro Thr Gln Ala Ser Ile Thr Lys
            100   105   110
Val Lys Gln Phe Glu Gly Ser Thr Ser Phe Val Arg Arg Ser Gln Trp
            115   120   125
Met Leu Glu Gln Leu Arg Gln Val Asn Gly Ile Asp Pro Asn Gly Asp
            130   135   140
Ser Ala Glu Phe Asp Leu Leu Phe Glu Asn Ala Phe Asp Gln Trp Val
145   150   155   160
Ala Ser Thr Ala Ser Glu Lys Cys Thr Phe Phe Gln Ile Leu His His
                165   170   175
Thr Cys Gln Arg Tyr Leu Thr Asp Arg Lys Pro Glu Phe Ile Asn Cys
            180   185   190
Gln Ser Lys Ile Met Gly Gly Asn Ser Ile Leu His Ser Ala Ala Asp
            195   200   205
Ser Val Thr Ser Ala Val Gln Lys Ala Ser Gln Ala Leu Asn Glu Arg
            210   215   220
Gly Glu Arg Leu Gly Arg Ala Glu Glu Lys Thr Glu Asp Leu Lys Asn
225   230   235   240
Ser Ala Gln Gln Phe Ala Glu Thr Ala His Lys Leu Ala Met Lys His
                245   250   255
Lys Cys

```
<210> 4099
<211> 511
<212> DNA
<213> Homo sapiens

<400> 4099
accggtggat atagaagtac aggaatctcc aaggcaaatg tcaaaaaaaa aaataagcaa
60
attagggaaa ggttttctgt gaaattacct tctgattgta gccacatgaa acacatcaac
120
ttaaacaata aaaaattgta taatggaatt ggatcagggg gttcccaaaa ccccttcac
180
tgaggtttgg caattcactg agaaggactc acaggactca gcagatagtc atacttgggg
240
ctttgattta ttacatttaa tacagcaaaa agacacaaag caacatttga gaaaggaaaa
300
ggtgcatgtg tcaaagtctg gaggaagcca ggcacaagct acaggagtca tctcctgtgt
360
agctagcagg atatgcttaa ttcccccagc ctcaaatttt gacgacacat gtgcaatgtt
420
gtctacctta ccagagtttc attagaggct cagcacccat gttttcgatg gaggctagtc
480
acataggcaa cctctcctct ccctcacgcg t
511


<210> 4100
<211> 100
<212> PRT
<213> Homo sapiens

<400> 4100
Met Glu Leu Asp Gln Gly Val Pro Lys Thr Pro Phe Thr Glu Val Trp
1               5                   10                  15
Gln Phe Thr Glu Lys Asp Ser Gln Asp Ser Ala Asp Ser His Thr Trp
            20                  25                  30
Gly Phe Asp Leu Leu His Leu Ile Gln Gln Lys Asp Thr Lys Gln His
        35                  40                  45
Leu Arg Lys Glu Lys Val His Val Ser Lys Ser Gly Gly Ser Gln Ala
    50                  55                  60
Gln Ala Thr Gly Val Ile Ser Cys Val Ala Ser Arg Ile Cys Leu Ile
65                  70                  75                  80
Pro Pro Ala Ser Asn Phe Asp Asp Thr Cys Ala Met Leu Ser Thr Leu
                85                  90                  95
Pro Glu Phe His
            100


<210> 4101
<211> 536
<212> DNA
<213> Homo sapiens

<400> 4101
```

```
ttttttttttt ttttttttttt ttttttttttt tttttgagga accccagaaa tgtgtttatt
60
aagttggact cgtattgctg tgtggggtcc cagtgcacgc gtgtgcaccc gctacaagat
120
ccaggaaaga tggcacacgg cagacgacga caggaaggac acctgctccc cacccttccc
180
gggaccccgc catgtgcaaa attcgagctg gggtctgcag ctgcttggag agacccaggg
240
cctcttgctc cacagcctgc aaggtctgag caggcaacgg ccctggggcg gtgaggcccc
300
cgcctggtca ctccccgcgc cccccatgca ggcagtggag gggaggacac gcaggaggac
360
cagacgctaa aggtgtaaac gggcagccgt ggcactcctc acctctcaat aaataagata
420
aataactaaa taaataaaca actaaataaa gacatgaagg aatggatgca gagacgtgaa
480
cggatggcgc aggacgtccc tggtgggggc cacggtcccc ttaaggcatg tgggag
536
```

```
<210> 4102
<211> 106
<212> PRT
<213> Homo sapiens
```

```
<400> 4102
Met Cys Leu Leu Ser Trp Thr Arg Ile Ala Val Trp Gly Pro Ser Ala
 1               5                  10                  15
Arg Val Cys Thr Arg Tyr Lys Ile Gln Glu Arg Trp His Thr Ala Asp
            20                  25                  30
Asp Asp Arg Lys Asp Thr Cys Ser Pro Pro Phe Pro Gly Pro Arg His
            35                  40                  45
Val Gln Asn Ser Ser Trp Gly Leu Gln Leu Leu Gly Glu Thr Gln Gly
    50                  55                  60
Leu Leu Leu His Ser Leu Gln Gly Leu Ser Arg Gln Arg Pro Trp Gly
65                  70                  75                  80
Gly Glu Ala Pro Ala Trp Ser Leu Pro Ala Pro Pro Met Gln Ala Val
                85                  90                  95
Glu Gly Arg Thr Arg Arg Arg Thr Arg Arg
                100                 105
```

```
<210> 4103
<211> 3040
<212> DNA
<213> Homo sapiens
```

```
<400> 4103
ncggccgcgt tccccacaga ggacagcagg acttccaagg agagcatgtc ggaggctgat
60
cgcgcccaga agatggacgg ggagtccgag gaggagcagg agtccgtgga caccggggag
120
gaggaggaag gcggtgacga gtctgacctg agttcggaat ccagcattaa gaagaaatct
180
caagaggaaa ggaaagaccg acagtccctg gataagccag ccaggaaaag gaggcggaga
240
```

```
agtagaaaga agcccagcgg tgccctcggt tctgagtcgt ataagtcatc tgcaggaagc
300
gctgagcaga cggcaccagg agacagcaca gggtacatgg aagtttctct ggactccctg
360
gatctccgag tcaaaggaat tctgtcttca caagcagaag ggttggccaa cggtccagat
420
gtgctggaga cagacggcct ccaggaagtg cctctctgca gctgccggat ggaaacaccg
480
aagagtcgag agatcaccac actggccaac aaccagtgca tggctacaga gagcgtggac
540
catgaattgg gccggtgcac aaacagcgtg gtcaagtatg agctgatgcg cccctccaac
600
aaggccccgc tcctcgtgct gtgtgaagac caccggggcc gcatggtgaa gcaccagtgc
660
tgtcctggct gtggctactt ctgcacagcg ggtaatttta tggagtgtca gcccgagagc
720
agcatctctc accgtttcca caaagactgt gcctctcgag tcaataacgc cagctattgt
780
ccccactgtg gggaggagag ctccaaggcc aaagaggtga cgatagctaa agcagacacc
840
acctcgaccg tgacaccagt ccccgggcag gagaagggct cggccnctgg aggcagggcc
900cgggcagtgc tnngccgggc caccactctc ggaggacgac aagctgcagg       960
gtgcagcctc ccacgntgcc cgagggcttt gatccaacgg gacctgctgg gcttgggagg
1020
ccaactcccg gcctttccca gggaccaggg aaggaaacct tggagagcgc tctcatcgcc
1080
ctcgactcgg aaaaacccaa gaagcttcgc ttccacccaa agcagctgta cttctccgcc
1140
aggcaagggg agcttcagaa ggtgctcctc atgctggtgg acggaattga ccccaacttc
1200
aaaatggagc accagaataa gcgctctcca ctgcacgccg cggcagaggc tggacacgtg
1260
gacatctgcc acatgctggt tcaggcgggc gctaatattg acacctgctc agaagaccag
1320
aggaccccgt tgatggaagc agccgaaaac aaccatctgg aagcagtgaa gtacctcatc
1380
aaggctgggg ccctggtgga tcccaaggac gcagagggct ctacgtgttt gcacctggct
1440
gccaagaaag gccactacga agtggtccag tacctgcttt caaatggacg gatggacgtc
1500
aactgtcagg atgacggagg ctggacaccc atgatctggg ccacagagta caagcacgtg
1560
gacctcgtga agctgctgct gtccaagggc tctgacatca acatccgaga caacgaggag
1620
aacatttgcc tgcactgggc ggcgttctcc ggctgcgtgg acatagccga gatcctgctg
1680
gctgccaagt gcgacctcca cgccgtgaac atccacggag actcgccact gcacattgcc
1740
gcccgggaga accgctacga ctgtgtcgtc ctctttcttt ctcgggattc agatgtcacc
1800
ttaaagaaca aggaaggaga gacgcccctg cagtgtgcga gcctcaactc tcaggtgtgg
1860
agcgctctgc agatgagcaa ggctctgcag gactcggccc ccgacaggcc cagccccgtg
1920
```

gagaggatag tgagcaggga catcgctcga ggctacgagc gcatccccat cccctgtgtc
1980
aacgccgtgg acagcgagcc atgccccagc aactacaagt acgtctctca gaactgcgtg
2040
acgtccccca tgaacatcga cagaaatatc actcatctgc agtactgcgt gtgcatcgac
2100
gactgctcct ccagcaactg catgtgcggc cagctcagca tgcgctgctg gtacgacaag
2160
gatggccggc tcctgccaga gttcaacatg gcggagcctc ccttgatctt cgaatgcaac
2220
cacgcgtgct cctgctggag gaactgccga atcgcgtcg tacagaatgg tctcagggca
2280
aggctgcagc tctaccggac gcgggacatg ggctggggcg tgcggtccct gcaggacatc
2340
ccaccaggca cctttgtctg cgagtatgtt ggggagctga tttcagactc agaagccgac
2400
gttcgagagg aagattctta cctctttgat ctcgacaata aggacgggga ggtttactgc
2460
atcgacgcgc ggttctacgg gaacgtcagc cggttcatca accaccactg cgagcccaac
2520
ctggtgcccg tgcgcgtgtt catggcccac caggacctgc ggttcccccg gatcgccttc
2580
ttcagcaccc gcctgatcga ggccggcgag cagctcgggt ttgactatgg agagcgcttc
2640
tgggacatca aaggcaagct cttcagctgc cgctgcggct cccccaagtg ccggcactcg
2700
agcgcggccc tggcccagcg tcaggccagc gcggcccagg aggcccagga ggacggcttg
2760
cccgacacca gctccgcggc tgccgcgacc ccctatgaga cgccgccggc cagcggggcg
2820
ctcgggagcc agggaccgcc gcgtcgccga ttagaggacg aggaggagag attccgcacg
2880
caaccgaaag ggtccttcgg ggctgcgccg ccggcttcct ggaggggtcg gaggtgaggc
2940
tgcagcccct gcgggcgggt gtggatgcct cccagccacc ttcccaaacc tgcggcctca
3000
ccgcgggccc agtgcccagg ctggagcgca cactttggtg
3040

<210> 4104
<211> 978
<212> PRT
<213> Homo sapiens

<400> 4104
Xaa Ala Ala Phe Pro Thr Glu Asp Ser Arg Thr Ser Lys Glu Ser Met
1   5   10   15
Ser Glu Ala Asp Arg Ala Gln Lys Met Asp Gly Glu Ser Glu Glu Glu
            20   25   30
Gln Glu Ser Val Asp Thr Gly Glu Glu Glu Gly Gly Asp Glu Ser
            35   40   45
Asp Leu Ser Ser Glu Ser Ser Ile Lys Lys Lys Ser Gln Glu Glu Arg
        50   55   60
Lys Asp Arg Gln Ser Leu Asp Lys Pro Ala Arg Lys Arg Arg Arg Arg

```
        65                      70                      75                      80
Ser Arg Lys Lys Pro Ser Gly Ala Leu Gly Ser Glu Ser Tyr Lys Ser
                85                      90                      95
Ser Ala Gly Ser Ala Glu Gln Thr Ala Pro Gly Asp Ser Thr Gly Tyr
                100                     105                     110
Met Glu Val Ser Leu Asp Ser Leu Asp Leu Arg Val Lys Gly Ile Leu
        115                     120                     125
Ser Ser Gln Ala Glu Gly Leu Ala Asn Gly Pro Asp Val Leu Glu Thr
        130              ·        135                     140
Asp Gly Leu Gln Glu Val Pro Leu Cys Ser Cys Arg Met Glu Thr Pro
145                     150                     155                     160
Lys Ser Arg Glu Ile Thr Thr Leu Ala Asn Asn Gln Cys Met Ala Thr
                165                     170                     175
Glu Ser Val Asp His Glu Leu Gly Arg Cys Thr Asn Ser Val Val Lys
                180                     185                     190
Tyr Glu Leu Met Arg Pro Ser Asn Lys Ala Pro Leu Leu Val Leu Cys
        195                     200                     205
Glu Asp His Arg Gly Arg Met Val Lys His Gln Cys Cys Pro Gly Cys
        210                     215                     220
Gly Tyr Phe Cys Thr Ala Gly Asn Phe Met Glu Cys Gln Pro Glu Ser
225                     230                     235                     240
Ser Ile Ser His Arg Phe His Lys Asp Cys Ala Ser Arg Val Asn Asn
                245                     250              ·        255
Ala Ser Tyr Cys Pro His Cys Gly Glu Glu Ser Ser Lys Ala Lys Glu
                260                     265                     270
Val Thr Ile Ala Lys Ala Asp Thr Thr Ser Thr Val Thr Pro Val Pro
                275                     280                     285
Gly Gln Glu Lys Gly Ser Ala Xaa Gly Gly Arg Ala Asp Thr Thr Thr
        290                     295                     300
Gly Ser Ala Xaa Pro Gly His His Ser Arg Arg Thr Thr Ser Cys Arg
305                     310                     315                     320
Val Gln Pro Pro Thr Xaa Pro Glu Gly Phe Asp Pro Thr Gly Pro Ala
                325                     330                     335
Gly Leu Gly Arg Pro Thr Pro Gly Leu Ser Gln Gly Pro Gly Lys Glu
                340                     345                     350
Thr Leu Glu Ser Ala Leu Ile Ala Leu Asp Ser Glu Lys Pro Lys Lys
                355                     360                     365
Leu Arg Phe His Pro Lys Gln Leu Tyr Phe Ser Ala Arg Gln Gly Glu
        370                     375                     380
Leu Gln Lys Val Leu Leu Met Leu Val Asp Gly Ile Asp Pro Asn Phe
385                     390                     395                     400
Lys Met Glu His Gln Asn Lys Arg Ser Pro Leu His Ala Ala Ala Glu
                405                     410                     415
Ala Gly His Val Asp Ile Cys His Met Leu Val Gln Ala Gly Ala Asn
                420                     425                     430
Ile Asp Thr Cys Ser Glu Asp Gln Arg Thr Pro Leu Met Glu Ala Ala
        435                     440                     445
Glu Asn Asn His Leu Glu Ala Val Lys Tyr Leu Ile Lys Ala Gly Ala
        450                     455                     460
Leu Val Asp Pro Lys Asp Ala Glu Gly Ser Thr Cys Leu His Leu Ala
465                     470                     475                     480
Ala Lys Lys Gly His Tyr Glu Val Val Gln Tyr Leu Leu Ser Asn Gly
                485                     490                     495
Arg Met Asp Val Asn Cys Gln Asp Asp Gly Gly Trp Thr Pro Met Ile
```

```
                    500                 505                 510
Trp Ala Thr Glu Tyr Lys His Val Asp Leu Val Lys Leu Leu Leu Ser
            515                 520                 525
Lys Gly Ser Asp Ile Asn Ile Arg Asp Asn Glu Glu Asn Ile Cys Leu
            530                 535                 540
His Trp Ala Ala Phe Ser Gly Cys Val Asp Ile Ala Glu Ile Leu Leu
545                 550                 555                 560
Ala Ala Lys Cys Asp Leu His Ala Val Asn Ile His Gly Asp Ser Pro
                565                 570                 575
Leu His Ile Ala Ala Arg Glu Asn Arg Tyr Asp Cys Val Val Leu Phe
            580                 585                 590
Leu Ser Arg Asp Ser Asp Val Thr Leu Lys Asn Lys Glu Gly Glu Thr
            595                 600                 605
Pro Leu Gln Cys Ala Ser Leu Asn Ser Gln Val Trp Ser Ala Leu Gln
        610                 615                 620
Met Ser Lys Ala Leu Gln Asp Ser Ala Pro Asp Arg Pro Ser Pro Val
625                 630                 635                 640
Glu Arg Ile Val Ser Arg Asp Ile Ala Arg Gly Tyr Glu Arg Ile Pro
                645                 650                 655
Ile Pro Cys Val Asn Ala Val Asp Ser Glu Pro Cys Pro Ser Asn Tyr
                660                 665                 670
Lys Tyr Val Ser Gln Asn Cys Val Thr Ser Pro Met Asn Ile Asp Arg
            675                 680                 685
Asn Ile Thr His Leu Gln Tyr Cys Val Cys Ile Asp Asp Cys Ser Ser
        690                 695                 700
Ser Asn Cys Met Cys Gly Gln Leu Ser Met Arg Cys Trp Tyr Asp Lys
705                 710                 715                 720
Asp Gly Arg Leu Leu Pro Glu Phe Asn Met Ala Glu Pro Pro Leu Ile
                725                 730                 735
Phe Glu Cys Asn His Ala Cys Ser Cys Trp Arg Asn Cys Arg Asn Arg
                740                 745                 750
Val Val Gln Asn Gly Leu Arg Ala Arg Leu Gln Leu Tyr Arg Thr Arg
            755                 760                 765
Asp Met Gly Trp Gly Val Arg Ser Leu Gln Asp Ile Pro Pro Gly Thr
        770                 775                 780
Phe Val Cys Glu Tyr Val Gly Glu Leu Ile Ser Asp Ser Glu Ala Asp
785                 790                 795                 800
Val Arg Glu Glu Asp Ser Tyr Leu Phe Asp Leu Asp Asn Lys Asp Gly
                805                 810                 815
Glu Val Tyr Cys Ile Asp Ala Arg Phe Tyr Gly Asn Val Ser Arg Phe
            820                 825                 830
Ile Asn His His Cys Glu Pro Asn Leu Val Pro Val Arg Val Phe Met
            835                 840                 845
Ala His Gln Asp Leu Arg Phe Pro Arg Ile Ala Phe Phe Ser Thr Arg
        850                 855                 860
Leu Ile Glu Ala Gly Glu Gln Leu Gly Phe Asp Tyr Gly Glu Arg Phe
865                 870                 875                 880
Trp Asp Ile Lys Gly Lys Leu Phe Ser Cys Arg Cys Gly Ser Pro Lys
                885                 890                 895
Cys Arg His Ser Ser Ala Ala Leu Ala Gln Arg Gln Ala Ser Ala Ala
            900                 905                 910
Gln Glu Ala Gln Glu Asp Gly Leu Pro Asp Thr Ser Ser Ala Ala Ala
            915                 920                 925
Ala Thr Pro Tyr Glu Thr Pro Pro Ala Ser Gly Ala Leu Gly Ser Gln
```

```
              930                    935                    940
Gly Pro Pro Arg Arg Arg Leu Glu Asp Glu Glu Glu Arg Phe Arg Thr
945                      950                    955                    960
Gln Pro Lys Gly Ser Phe Gly Ala Ala Pro Pro Ala Ser Trp Arg Gly
                        965                    970                    975
Arg Arg
```

```
<210> 4105
<211> 775
<212> DNA
<213> Homo sapiens

<400> 4105
ncccgggcgt ctcccatcaa ctccccagcc agaggtactc catctcccaa gaggatgccc
60
tcaggtcgtg ggggacggga ccgcttcacc gctgagtcct acacagttct gggggacacg
120
ctgatcgacg gcggggagca ttactgggag gtgcgctacg agccggacag caaggcgttc
180
ggcgtgggcg tggcctaccg cagcctgggc cgcttcgagc aactgggcaa gacggccgcc
240
tcctggtgcc tgcactcaac aattggctgc aggtcagctt cacggaagca cgccaacaag
300
gtcaaggtgc tggacgcccc cgtgcccgac tgcctgggtg tgcactgtga cttccaccaa
360
ggcctcctgt ccttctacaa tgcccgcacc aaacaagtgc tgcacacttt caagaccagg
420
ttcacacagc cgctgctgcc tgctttcacg gtatggtgtg cagcttcca ggtgacgaca
480
ggcctgcagg tccccagtgc tgtgcgctgc ctgcaaaagc gaggcagtgc taccagcagc
540
tccaacacca gcctcaccta ggcccccagg cacccaccca gctggggtgt ttttggggga
600
gtcgccgcca agcccaggct gctggagcca ggcaccctcc tctgtcactt gctgcttgga
660
gccttaactc agatggggg ggtcaccaag agggagtggg caccctggcg ggccctctcc
720
ccacctcacc tcttaataaa ggtcagacac tggccaggca aaaaaaaaa aaata
775
```

```
<210> 4106
<211> 186
<212> PRT
<213> Homo sapiens

<400> 4106
Xaa Arg Ala Ser Pro Ile Asn Ser Pro Ala Arg Gly Thr Pro Ser Pro
1               5                   10                  15
Lys Arg Met Pro Ser Gly Arg Gly Gly Arg Asp Arg Phe Thr Ala Glu
            20                  25                  30
Ser Tyr Thr Val Leu Gly Asp Thr Leu Ile Asp Gly Gly Glu His Tyr
        35                  40                  45
Trp Glu Val Arg Tyr Glu Pro Asp Ser Lys Ala Phe Gly Val Gly Val
```

```
        50                      55                      60
Ala Tyr Arg Ser Leu Gly Arg Phe Glu Gln Leu Gly Lys Thr Ala Ala
65                      70                      75                      80
Ser Trp Cys Leu His Ser Thr Ile Gly Cys Arg Ser Ala Ser Arg Lys
                85                      90                      95
His Ala Asn Lys Val Lys Val Leu Asp Ala Pro Val Pro Asp Cys Leu
            100                     105                     110
Gly Val His Cys Asp Phe His Gln Gly Leu Leu Ser Phe Tyr Asn Ala
        115                     120                     125
Arg Thr Lys Gln Val Leu His Thr Phe Lys Thr Arg Phe Thr Gln Pro
    130                     135                     140
Leu Leu Pro Ala Phe Thr Val Trp Cys Gly Ser Phe Gln Val Thr Thr
145                     150                     155                     160
Gly Leu Gln Val Pro Ser Ala Val Arg Cys Leu Gln Lys Arg Gly Ser
            165                     170                     175
Ala Thr Ser Ser Ser Asn Thr Ser Leu Thr
                180                     185
```

<210> 4107
<211> 1442
<212> DNA
<213> Homo sapiens

<400> 4107
ngcacgaggc ggtgccgggg gcggggcgcg gcggctgtca gctgactgtg gcggcggcgg
60
cctcgaggtg acaacttgtc tccgtcgcag gctccggcgg gggcgcagga ggtcgcccgg
120
cgcgtcactg tcgggtcggc gagccacggg ggccgccgca gcaccatggc gaccaccgtc
180
agcactcagc gcgggccggt gtacatcggt gagctcccgc aggacttcct ccgcatcacg
240
cccacacagc agcagcggca ggtccagctg acgcccagg cgcccagcag ctgcagtacg
300
gaggcgcagg gcaccgtggg ccgactgaac atcacggtgg tacaggcaaa gttggccaag
360
aattacggca tgacccgcat ggacccctac tgccgactgc gcctgggcta cgcggtgtac
420
gagacgccca cggcacacaa tggcgccaag aatccccgct ggaataaggt catccactgc
480
acggtgcccc caggcgtgga ctctttctat ctcgagatct tcgatgagag agccttctcc
540
atggacgacc gcattgcctg gacccacatc accatcccgg agtccctgag gcagggcaag
600
gtggaggaca agtggtacag cctgagcggg aggcagggggg acgacaagga gggcatgatc
660
aacctcgtca tgtcctacgc gctgcttcca gctgccatgg tgatgccacc ccagcccgtg
720
gtcctgatgc caacagtgta ccagcagggc gttggctatg tgcccatcac agggatgccc
780
gctgtctgta gccccggcat ggtgcccgtg gccctgcccc cggccgccgt gaacgcccag
840
ccccgctgta gcgaggagga cctgaaagcc atccaggaca tgttccccaa catggaccag
900
```

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gaggtgatcc gctccgtgct ggaagcccag cgagggaaca aggatgccgc catcaactcc
960
ctgctgcaga tggggggagga gccatagagc ctctgcctcg atgccgtttt gccccccgctc
1020
tttggacacg ccgacccggc gctccccaag gaatgctgtc ccaacaagat tcccgtgaaa
1080
gagcacccgt gtcgccccct cccgtggact tctgtgccgc cccgtccaca cctgttcttg
1140
ggtgcatgtg ggttttcggt tcctggcggt ccaggacggg gcgggggctc ccctcccatc
1200
tcgtgctggg aggtctcagc gcgctctcct gtccctggga cgtgcgtctc tccttctcat
1260
gccgttctgg aaaatgctct tgctgtagag agcagctgct tctgccaggg tgttggaggt
1320
ggtggagcgc cttccgattc cattcatggc attttgtgat gtgatgtaat tggaatagag
1380
ctgttgattt aaggcacaca caaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa
1440
aa
1442


<210> 4108
<211> 273
<212> PRT
<213> Homo sapiens

<400> 4108
Met Ala Thr Thr Val Ser Thr Gln Arg Gly Pro Val Tyr Ile Gly Glu
 1               5                   10                  15
Leu Pro Gln Asp Phe Leu Arg Ile Thr Pro Thr Gln Gln Gln Arg Gln
            20                  25                  30
Val Gln Leu Asp Ala Gln Ala Pro Ser Ser Cys Ser Thr Glu Ala Gln
        35                  40                  45
Gly Thr Val Gly Arg Leu Asn Ile Thr Val Val Gln Ala Lys Leu Ala
    50                  55                  60
Lys Asn Tyr Gly Met Thr Arg Met Asp Pro Tyr Cys Arg Leu Arg Leu
65                  70                  75                  80
Gly Tyr Ala Val Tyr Glu Thr Pro Thr Ala His Asn Gly Ala Lys Asn
                85                  90                  95
Pro Arg Trp Asn Lys Val Ile His Cys Thr Val Pro Pro Gly Val Asp
            100                 105                 110
Ser Phe Tyr Leu Glu Ile Phe Asp Glu Arg Ala Phe Ser Met Asp Asp
            115                 120                 125
Arg Ile Ala Trp Thr His Ile Thr Ile Pro Glu Ser Leu Arg Gln Gly
    130                 135                 140
Lys Val Glu Asp Lys Trp Tyr Ser Leu Ser Gly Arg Gln Gly Asp Asp
145                 150                 155                 160
Lys Glu Gly Met Ile Asn Leu Val Met Ser Tyr Ala Leu Leu Pro Ala
                165                 170                 175
Ala Met Val Met Pro Pro Gln Pro Val Val Leu Met Pro Thr Val Tyr
            180                 185                 190
Gln Gln Gly Val Gly Tyr Val Pro Ile Thr Gly Met Pro Ala Val Cys
        195                 200                 205
Ser Pro Gly Met Val Pro Val Ala Leu Pro Pro Ala Ala Val Asn Ala
```

```
        210                215                220
Gln Pro Arg Cys Ser Glu Glu Asp Leu Lys Ala Ile Gln Asp Met Phe
225                230                235                240
Pro Asn Met Asp Gln Glu Val Ile Arg Ser Val Leu Glu Ala Gln Arg
                245                250                255
Gly Asn Lys Asp Ala Ala Ile Asn Ser Leu Leu Gln Met Gly Glu Glu
            260                265                270
Pro
```

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<210> 4109
<211> 1637
<212> DNA
<213> Homo sapiens

<400> 4109
gctgccctga agctacatgg gaagtgtgat gacgtcatgc ggctcctcat ggccgagctg
60
ggcttggaga tccccgccta tagcaggtgg caggatccca ttttctcact ggcgactccc
120
ctgcgtgctg gtgaagaagg cagccacagt cggaagtcgc tgtgcagaag cagagaggag
180
ctgcggggga aggtccggga gctggccagc gccgtccgga cgccaaata cttggtcgtc
240
tacacaggcg cgggaatcag cacggcagcg tctatcccag actaccgggg ccctaatgga
300
gtgtggacac tgcttcagaa agggagaagc gttagtgctg ccgacctgag cgaggccgag
360
ccaaccctca cccacatgag catcacccgt ctgcatgagc agaagctggt gcagcatgtg
420
gtgtctcaga actgtgacgg gctccacctg aggagtgggc tgccgcgcac ggccatctcc
480
gagctccacg ggaacatgta cattgaagtc tgtacctcct gcgttcccaa cagggagtac
540
gtgcgggtgt cgatgtgac ggagcgcact gccctccaca gacaccagac aggccggacc
600
tgccacaagt gtgggaccca gctgcgggac accattgtgc actttgggga gaggggggacg
660
ttggggcagc ctctgaactg ggaagcggcg accgaggctg ccagcagagc agacaccatc
720
ctgtgtctag ggtccagcct gaaggttcta aagaagtacc cacgcctctg gtgcatgacc
780
aagccccctg ccggcggccg actttacatc gtgaacctgc agtggacccc gaaggatgac
840
tgggctgccc tgaagctaca tgggaagtgt gatgacgtca tgcggctcct catggccgag
900
ctgggcttgg agatccccgc ctatagcagg tggcaggatc ccatttttctc actggcgact
960
cccctgcgtg ctggtgaaga aggcagccac agtcggaagt cgctgtgcag aagcagagag
1020
gaggccccgc ctggggaccg gggtgcaccg cttagctcgg cccccatcct aggggctgg
1080
tttggcaggg gctgcacaaa acgcacaaaa aggaagaaag tgacgtaatc acgtgctcga
1140
```

```
tgaagaacag ttggcacttt gcagatggcc agtgtcacgg tgaaggctgg gttgcccccca
1200
cgggtctagg gagaacgaac tctttgggga tgacattttc accgtgacat ttttagccat
1260
ttgtccttga ggaagcccct tgcactgctg cggttgtacc ctgatacggc ctggccatcg
1320
aggacacctg cccatccggc ctctgtgtca agaggtggca gccgcacctt tctgtgagaa
1380
cggaactcgg gttatttcag ccccggcctg cagagtggaa gcgcccagcg gcctttcctc
1440
gctcaccagg ccagtctcag ggcctcaccg tatttctact actacttaat gaaaaagtgt
1500
gaactttata gaatcctctc tgtactggat gtgcggcaga ggggtggctc cgagcctcgg
1560
ctctatgcag acctttttat ttctattaaa cgtttctgca ctggcaaaaa aaaaaaaaaa
1620
aaaaaaaaaa aaaaaaa
1637


<210> 4110
<211> 375
<212> PRT
<213> Homo sapiens

<400> 4110
Ala Ala Leu Lys Leu His Gly Lys Cys Asp Asp Val Met Arg Leu Leu
 1               5                  10                  15
Met Ala Glu Leu Gly Leu Glu Ile Pro Ala Tyr Ser Arg Trp Gln Asp
                20                  25                  30
Pro Ile Phe Ser Leu Ala Thr Pro Leu Arg Ala Gly Glu Glu Gly Ser
                35                  40                  45
His Ser Arg Lys Ser Leu Cys Arg Ser Arg Glu Glu Leu Arg Gly Lys
            50                  55                  60
Val Arg Glu Leu Ala Ser Ala Val Arg Asn Ala Lys Tyr Leu Val Val
65                  70                  75                  80
Tyr Thr Gly Ala Gly Ile Ser Thr Ala Ala Ser Ile Pro Asp Tyr Arg
                    85                  90                  95
Gly Pro Asn Gly Val Trp Thr Leu Leu Gln Lys Gly Arg Ser Val Ser
                100                 105                 110
Ala Ala Asp Leu Ser Glu Ala Glu Pro Thr Leu Thr His Met Ser Ile
            115                 120                 125
Thr Arg Leu His Glu Gln Lys Leu Val Gln His Val Val Ser Gln Asn
        130                 135                 140
Cys Asp Gly Leu His Leu Arg Ser Gly Leu Pro Arg Thr Ala Ile Ser
145                 150                 155                 160
Glu Leu His Gly Asn Met Tyr Ile Glu Val Cys Thr Ser Cys Val Pro
                165                 170                 175
Asn Arg Glu Tyr Val Arg Val Phe Asp Val Thr Glu Arg Thr Ala Leu
            180                 185                 190
His Arg His Gln Thr Gly Arg Thr Cys His Lys Cys Gly Thr Gln Leu
        195                 200                 205
Arg Asp Thr Ile Val His Phe Gly Glu Arg Gly Thr Leu Gly Gln Pro
    210                 215                 220
Leu Asn Trp Glu Ala Ala Thr Glu Ala Ala Ser Arg Ala Asp Thr Ile
```

```
225                        230                   235                   240
Leu Cys Leu Gly Ser Ser Leu Lys Val Leu Lys Lys Tyr Pro Arg Leu
                    245                   250                   255
Trp Cys Met Thr Lys Pro Pro Ala Gly Gly Arg Leu Tyr Ile Val Asn
                    260                   265                   270
Leu Gln Trp Thr Pro Lys Asp Asp Trp Ala Ala Leu Lys Leu His Gly
                    275                   280                   285
Lys Cys Asp Asp Val Met Arg Leu Leu Met Ala Glu Leu Gly Leu Glu
                    290                   295                   300
Ile Pro Ala Tyr Ser Arg Trp Gln Asp Pro Ile Phe Ser Leu Ala Thr
305                        310                   315                   320
Pro Leu Arg Ala Gly Glu Glu Gly Ser His Ser Arg Lys Ser Leu Cys
                    325                   330                   335
Arg Ser Arg Glu Glu Ala Pro Pro Gly Asp Arg Gly Ala Pro Leu Ser
                    340                   345                   350
Ser Ala Pro Ile Leu Gly Gly Trp Phe Gly Arg Gly Cys Thr Lys Arg
                    355                   360                   365
Thr Lys Arg Lys Lys Val Thr
370                   375
```

```
<210> 4111
<211> 2599
<212> DNA
<213> Homo sapiens

<400> 4111
nccttgtagt tctcaccagg cttgtggaac ttaagggcct cccccggag ctgctccatc
60
agagacaggg tctggtcagc agtctcgcca ttctccacca catccttttt agtttccggt
120
gtctctgcaa tggcggctct agactccctg tcgctcttca ctagcctcgg cctgagcgag
180
cagaaggccc gcgagacgct caagaactcg ctctgagcg cgcagctgcg cgaggccgct
240
actcaggctc agcagaccct gggttccacc attgacaaag ctaccgggat cctgttatat
300
ggcttggcct cccgactcag ggatacccgg cgtctctcct tccttgtaag ctacatagcc
360
agtaagaaga tccacactga gccccagcta agcgctgccc ttgagtatgt gcggagtcac
420
cccttggacc ccatcgacac tgtggacttc gagcgggaat gtggcgtggg tgtcattgtg
480
accccagagc agattgagga ggctgtggag gctgctatta caggcaccg gccccagctc
540
ctggtggaac gttaccattt caacatgggg ctgctgatgg gagaggctcg ggctgtgctg
600
aagtgggcag atggcaaaat gatcaagaat gaagtggaca tgcaggtcct ccaccttctg
660
ggccccaagt tggaggctga tctggagaag aagttcaagg tggcaaaagc tcggctagaa
720
gaaacagacc ggaggacggc aaaggatgtg gtggagaatg cgagactgc tgaccagacc
780
ctgtctctga tggagcagct ccggggggag gcccttaagt tccacaagcc tggtgagaac
840
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```
tacaagaccc caggctatgt ggtcactcca cacaccatga atctactaaa gcagcacctg
900
gagattactg gtgggcaggt acgtacccgg ttcccgccag aacccaatgg aatcctgcat
960
attggacatg ccaaagccat caatttcaac tttggctatg ccaaggccaa caatggcatc
1020
tgttttctgc gttttgatga caccaaccct gagaaggagg aagcaaagtt cttcacggcc
1080
atctgtgaca tggtagcctg gctaggctac acaccttaca aagtcacata tgcgtctgac
1140
tattttgacc agctatatgc gtgggctgtg gagctcatcc gcaggggtct ggcttatgtg
1200
tgccaccagc gaggagagga gctcaaaggc cataatactc tgccttcacc ctggagagac
1260
cgtcccatgg aggagtcact gctgctcttt gaggcaatgc gcaagggcaa gttttcagag
1320
ggcgaggcca cactacggat gaagctggtg atggaggatg gcaagatgga ccctgtagcc
1380
tatcgagtca agtatacacc acaccaccgc acagggggaca aatggtgcat ctatcccacc
1440
tacgactaca cacactgcct ctgtgactcc atcgagcaca tcactcactc actctgcacc
1500
aaggaattcc aggcccgacg ctcttcctac ttctggcttt gcaatgcact ggacgtctat
1560
tgccctgtgc agtgggagta tggccgcctc aacctgcact atgctgttgt ctctaagagg
1620
aagatcctcc agcttgtagc aactggtgct gtgcgggact gggatgaccc acggctcttt
1680
acactcacgg ccctgcgacg gcggggcttc ccacctgagg ccatcaacaa cttctgtgcc
1740
cgggtgggag tgactgtggc acaaaccaca atggagccac atcttctaga agcctgtgtg
1800
cgtgatgtgc tgaatgacac agccccacga gccatggctg tgctggagtc actacgggtc
1860
atcatcacca actttcctgc tgccaagtcc ttggacatcc aggtgcccaa cttcccagct
1920
gatgagacca aaggcttcca tcaggttccc tttgcacccca ttgtcttcat tgagaggact
1980
gacttcaagg aggagccaga gccaggattt aagcgcctgg cttggggcca gcctgtgggc
2040
ctgaggcata caggctacgt cattgagctg cagcatgttg tcaagggccc cagtggttgt
2100
gtagagagtc tggaggtgac ctgcagacgg gcagatgctg gagagaagcc aaaggccttt
2160
attcactggg tgtcacagcc tttgatgtgt gaggttcgcc tctatgagcg actattccag
2220
cacaagaacc ctgaagatcc tactgaggtg cctggtggat ttttaagtga cctgaacctg
2280
gcatcactac acgtggtgga tgcagcatta gtggactgct ctgtggccct ggcaaaaccc
2340
ttcgacaagt ccagtttga gcgtcttgga tatttctccg tggatccaga cagccatcag
2400
ggaaagcttg tctttaaccg aactgtcaca ctgaaggaag acccaggaaa ggtgtgagct
2460
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```
ggaagcactg aacctacctc atcctcctgg agggtgtggc taccctcgcc accccaaatt
2520
ccatgtcaat aaagaacagc taaattcaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa
2580
aaaaaaaaag atctttaat
2599
```

```
<210> 4112
<211> 775
<212> PRT
<213> Homo sapiens

<400> 4112
Met Ala Ala Leu Asp Ser Leu Ser Leu Phe Thr Ser Leu Gly Leu Ser
 1               5                  10                  15
Glu Gln Lys Ala Arg Glu Thr Leu Lys Asn Ser Ala Leu Ser Ala Gln
            20                  25                  30
Leu Arg Glu Ala Ala Thr Gln Ala Gln Gln Thr Leu Gly Ser Thr Ile
        35                  40                  45
Asp Lys Ala Thr Gly Ile Leu Leu Tyr Gly Leu Ala Ser Arg Leu Arg
    50                  55                  60
Asp Thr Arg Arg Leu Ser Phe Leu Val Ser Tyr Ile Ala Ser Lys Lys
65                  70                  75                  80
Ile His Thr Glu Pro Gln Leu Ser Ala Ala Leu Glu Tyr Val Arg Ser
                85                  90                  95
His Pro Leu Asp Pro Ile Asp Thr Val Asp Phe Glu Arg Glu Cys Gly
            100                 105                 110
Val Gly Val Ile Val Thr Pro Glu Gln Ile Glu Glu Ala Val Glu Ala
        115                 120                 125
Ala Ile Asn Arg His Arg Pro Gln Leu Leu Val Glu Arg Tyr His Phe
    130                 135                 140
Asn Met Gly Leu Leu Met Gly Glu Ala Arg Ala Val Leu Lys Trp Ala
145                 150                 155                 160
Asp Gly Lys Met Ile Lys Asn Glu Val Asp Met Gln Val Leu His Leu
                165                 170                 175
Leu Gly Pro Lys Leu Glu Ala Asp Leu Glu Lys Lys Phe Lys Val Ala
            180                 185                 190
Lys Ala Arg Leu Glu Glu Thr Asp Arg Arg Thr Ala Lys Asp Val Val
        195                 200                 205
Glu Asn Gly Glu Thr Ala Asp Gln Thr Leu Ser Leu Met Glu Gln Leu
    210                 215                 220
Arg Gly Glu Ala Leu Lys Phe His Lys Pro Gly Glu Asn Tyr Lys Thr
225                 230                 235                 240
Pro Gly Tyr Val Val Thr Pro His Thr Met Asn Leu Leu Lys Gln His
                245                 250                 255
Leu Glu Ile Thr Gly Gly Gln Val Arg Thr Arg Phe Pro Pro Glu Pro
            260                 265                 270
Asn Gly Ile Leu His Ile Gly His Ala Lys Ala Ile Asn Phe Asn Phe
        275                 280                 285
Gly Tyr Ala Lys Ala Asn Asn Gly Ile Cys Phe Leu Arg Phe Asp Asp
    290                 295                 300
Thr Asn Pro Glu Lys Glu Glu Ala Lys Phe Phe Thr Ala Ile Cys Asp
305                 310                 315                 320
Met Val Ala Trp Leu Gly Tyr Thr Pro Tyr Lys Val Thr Tyr Ala Ser
```

```
                        325                     330                     335
Asp Tyr Phe Asp Gln Leu Tyr Ala Trp Ala Val Glu Leu Ile Arg Arg
                340                     345                     350
Gly Leu Ala Tyr Val Cys His Gln Arg Gly Glu Glu Leu Lys Gly His
                355                     360                     365
Asn Thr Leu Pro Ser Pro Trp Arg Asp Arg Pro Met Glu Glu Ser Leu
    370                     375                     380
Leu Leu Phe Glu Ala Met Arg Lys Gly Lys Phe Ser Glu Gly Glu Ala
385                     390                     395                     400
Thr Leu Arg Met Lys Leu Val Met Glu Asp Gly Lys Met Asp Pro Val
                405                     410                     415
Ala Tyr Arg Val Lys Tyr Thr Pro His His Arg Thr Gly Asp Lys Trp
                420                     425                     430
Cys Ile Tyr Pro Thr Tyr Asp Tyr Thr His Cys Leu Cys Asp Ser Ile
                435                     440                     445
Glu His Ile Thr His Ser Leu Cys Thr Lys Glu Phe Gln Ala Arg Arg
    450                     455                     460
Ser Ser Tyr Phe Trp Leu Cys Asn Ala Leu Asp Val Tyr Cys Pro Val
465                     470                     475                     480
Gln Trp Glu Tyr Gly Arg Leu Asn Leu His Tyr Ala Val Val Ser Lys
                485                     490                     495
Arg Lys Ile Leu Gln Leu Val Ala Thr Gly Ala Val Arg Asp Trp Asp
                500                     505                     510
Asp Pro Arg Leu Phe Thr Leu Thr Ala Leu Arg Arg Arg Gly Phe Pro
                515                     520                     525
Pro Glu Ala Ile Asn Asn Phe Cys Ala Arg Val Gly Val Thr Val Ala
    530                     535                     540
Gln Thr Thr Met Glu Pro His Leu Leu Glu Ala Cys Val Arg Asp Val
545                     550                     555                     560
Leu Asn Asp Thr Ala Pro Arg Ala Met Ala Val Leu Glu Ser Leu Arg
                565                     570                     575
Val Ile Ile Thr Asn Phe Pro Ala Ala Lys Ser Leu Asp Ile Gln Val
                580                     585                     590
Pro Asn Phe Pro Ala Asp Glu Thr Lys Gly Phe His Gln Val Pro Phe
                595                     600                     605
Ala Pro Ile Val Phe Ile Glu Arg Thr Asp Phe Lys Glu Glu Pro Glu
    610                     615                     620
Pro Gly Phe Lys Arg Leu Ala Trp Gly Gln Pro Val Gly Leu Arg His
625                     630                     635                     640
Thr Gly Tyr Val Ile Glu Leu Gln His Val Val Lys Gly Pro Ser Gly
                645                     650                     655
Cys Val Glu Ser Leu Glu Val Thr Cys Arg Arg Ala Asp Ala Gly Glu
                660                     665                     670
Lys Pro Lys Ala Phe Ile His Trp Val Ser Gln Pro Leu Met Cys Glu
    675                     680                     685
Val Arg Leu Tyr Glu Arg Leu Phe Gln His Lys Asn Pro Glu Asp Pro
    690                     695                     700
Thr Glu Val Pro Gly Gly Phe Leu Ser Asp Leu Asn Leu Ala Ser Leu
705                     710                     715                     720
His Val Val Asp Ala Ala Leu Val Asp Cys Ser Val Ala Leu Ala Lys
                725                     730                     735
Pro Phe Asp Lys Phe Gln Phe Glu Arg Leu Gly Tyr Phe Ser Val Asp
                740                     745                     750
Pro Asp Ser His Gln Gly Lys Leu Val Phe Asn Arg Thr Val Thr Leu
```

```
        755                760                   765
Lys Glu Asp Pro Gly Lys Val
     770              775


<210> 4113
<211> 1894
<212> DNA
<213> Homo sapiens


<400> 4113
cgccctgtga gggacaagcg tttgccgtag gggttgaaaa gaattggggt gcagtagttc
60
gctccccaga agggaccccc cagaaaatcc ggcagctgat agatgagggg attgccccgg
120
taagagggag gcgtggacgc gaaggacacg tctgccacat cccagtcagt taatggatca
180
ccccaagcgg aacaaccttc attggaatct acaagcaaag aagccttctt tagcagagtg
240
gaaacatttt cttctttgaa atgggcgggt aagccctttg agctgtctcc actcgtctgt
300
gcaaaatatg gctgggtcac agtggaatgt gatatgctca agtgctctag ctgtcaagct
360
tttctctgtg ccagtttaca accagctttt gactttgaca gatataagca acgatgtgct
420
gagctgaaga aagccttgtg tactgcccat gagaagttct gtttctggcc agacagccca
480
tccccagacc gatttgggat gttgcccctg gatgagcctg ctattcttgt tagtgaattc
540
ctagatcgtt ttcaaagcct ttgtcacttg gacctccagc ttccttccct aaggccggag
600
gacttgaaaa ctatgtgctt gacagaagac aagatcagtc ttctcctaca cttgcttgaa
660
gatgaacttg atcaccgaac tgatgagaga aaaactacaa tcaaattagg ctcagacatc
720
caagtccacg tcactgcctg tattctctct gtgtgtggct gggcgtgtag ttcctctttg
780
gaatccatgc agctctccct gatagcatgt tcgcaatgta tgaggaaggt ggggctctgg
840
ggcttccagc agattgaatc gtccatgact gacctggatg catcctttgg cctgaccagc
900
tccccaatcc caggccttga ggggcgacca gagcgcttac ctctggtgcc tgaatctcct
960
cggaggatga tgacccggag ccaggatgcc actttctccc caggctcaga gcaggctgaa
1020
aagagccctg gtcccattgt ctctcgaact cggagctggg actcttccag tcctgttgac
1080
cgtcctgagc cagaggctgc tagccccacc accagaactc gcccagtgac ccgaagcatg
1140
ggaacaggag acacccctgg cctggaggta ccatctagcn cctctgcgga aagccaagcg
1200
agctcgctct gctcctccag cagttcggac acatcttccc gaagcttctt tgatcccacc
1260
tctcagcata gagactggtg cccttgggtg aatatcacac ttggcaaaga aagcagggag
1320
```

```
aatggtggaa ctgaaccaga tgccagcgcc ccagcagagc caggctggaa agcagtgctg
1380
accatcctct tggcgcacaa acagtctagc cagccagctg aaacggactc catgagtctc
1440
tctgagaaat caaggaaagt attccgaata tttcggcagt gggaatctct gtgctcatgc
1500
tgaagatact ccagcgcctt cctggagata gctggaatga gagtgacttt ttgaaaaatt
1560
aaggctgagt tcctttcggt cagctgacac taagtttttc ctgttctggg ttaatcataa
1620
ggagccccct gccatagcaa aggcagtgag tgtcaactat ctgcatctgg ctgagagaga
1680
cccgtttcct ttcagggatg tggacagggt aagggcagca agcatggttc tgttaaagga
1740
gtgtggggtt aacagactag aaggaagact aaggacctga ccacccattt cagcatcttc
1800
aatgtggagc agtgttctga ggactcttct atcctaggac tatgacagtg tgtattaata
1860
aaatatttgc taagaaaaaa aaaaaaaaaa aaaa
1894
```

```
<210> 4114
<211> 389
<212> PRT
<213> Homo sapiens
```

```
<400> 4114
Met Leu Lys Cys Ser Ser Cys Gln Ala Phe Leu Cys Ala Ser Leu Gln
  1               5                  10                  15
Pro Ala Phe Asp Phe Asp Arg Tyr Lys Gln Arg Cys Ala Glu Leu Lys
             20                  25                  30
Lys Ala Leu Cys Thr Ala His Glu Lys Phe Cys Phe Trp Pro Asp Ser
         35                  40                  45
Pro Ser Pro Asp Arg Phe Gly Met Leu Pro Leu Asp Glu Pro Ala Ile
     50                  55                  60
Leu Val Ser Glu Phe Leu Asp Arg Phe Gln Ser Leu Cys His Leu Asp
65                  70                  75                  80
Leu Gln Leu Pro Ser Leu Arg Pro Glu Asp Leu Lys Thr Met Cys Leu
                 85                  90                  95
Thr Glu Asp Lys Ile Ser Leu Leu Leu His Leu Leu Glu Asp Glu Leu
             100                 105                 110
Asp His Arg Thr Asp Glu Arg Lys Thr Thr Ile Lys Leu Gly Ser Asp
         115                 120                 125
Ile Gln Val His Val Thr Ala Cys Ile Leu Ser Val Cys Gly Trp Ala
     130                 135                 140
Cys Ser Ser Ser Leu Glu Ser Met Gln Leu Ser Leu Ile Ala Cys Ser
145                 150                 155                 160
Gln Cys Met Arg Lys Val Gly Leu Trp Gly Phe Gln Gln Ile Glu Ser
                 165                 170                 175
Ser Met Thr Asp Leu Asp Ala Ser Phe Gly Leu Thr Ser Ser Pro Ile
             180                 185                 190
Pro Gly Leu Glu Gly Arg Pro Glu Arg Leu Pro Leu Val Pro Glu Ser
         195                 200                 205
Pro Arg Arg Met Met Thr Arg Ser Gln Asp Ala Thr Phe Ser Pro Gly
```

3300

```
         210                    215                   220
Ser Glu Gln Ala Glu Lys Ser Pro Gly Pro Ile Val Ser Arg Thr Arg
225                     230                   235                   240
Ser Trp Asp Ser Ser Ser Pro Val Asp Arg Pro Glu Pro Glu Ala Ala
                245                   250                   255
Ser Pro Thr Thr Arg Thr Arg Pro Val Thr Arg Ser Met Gly Thr Gly
                260                   265                   270
Asp Thr Pro Gly Leu Glu Val Pro Ser Ser Xaa Ser Ala Glu Ser Gln
            275                   280                   285
Ala Ser Ser Leu Cys Ser Ser Ser Ser Asp Thr Ser Ser Arg Ser
        290                   295                   300
Phe Phe Asp Pro Thr Ser Gln His Arg Asp Trp Cys Pro Trp Val Asn
305                   310                   315                   320
Ile Thr Leu Gly Lys Glu Ser Arg Glu Asn Gly Gly Thr Glu Pro Asp
                325                   330                   335
Ala Ser Ala Pro Ala Glu Pro Gly Trp Lys Ala Val Leu Thr Ile Leu
            340                   345                   350
Leu Ala His Lys Gln Ser Ser Gln Pro Ala Glu Thr Asp Ser Met Ser
            355                   360                   365
Leu Ser Glu Lys Ser Arg Lys Val Phe Arg Ile Phe Arg Gln Trp Glu
        370                   375                   380
Ser Leu Cys Ser Cys
385


<210> 4115
<211> 1056
<212> DNA
<213> Homo sapiens


<400> 4115
ccaaatccag ttttcatatt taaagcgaat gagcccctc ctctcagtgg gaaagatgag
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ctgaagcttt actccctcga tagtgttggg aaaagaaatc agacaaaaat ctaaggaagg
120
accaaatatt gtacagagtg tgccagtagg cttttgcaac tggactgaaa atacctgcct
180
tttctctcca caggggaaag tggaagttga agctgggaaa gaaggtatga agtttgaagc
240
gagcgccttc tcatactatg gcgtgatggc cctgacagcc tctccaggtg aaaataagtc
300
ccctcctcgc ccatgtggct tgaatcactc agactctctc agtcgaagcg accggattga
360
cgccgtcaca ccaacactgg ggagcagcaa taaccagctc aattcttcgc tcctccaagt
420
ctacatcccc gattactcgg tgcgagccct ttcggatctg cagtttgtta agatctcaag
480
acagcaatac caaaatgcct tgatggcatc ccggatggac aaaaccccc agtcttcaga
540
cagtgaaaac actaaaatcg aattgactct tacggagctg catgacgggt tgccagacga
600
gacagccaac ctgctcaacg aacagaactg tgtgacgcac agtaaggcca accacagcct
660
gcacaacgaa ggcgccatct aggccgcgct ggctgcaccc gcccaggccc gcacccgccc
720
```

```
agtcccgagg gcccggccct gtctgcccat gacttcactg gtgtgagctt gtccgccatg
780
ctgtaccctg caacatcctg agaccaaaga ccttgtgccc ttcccaggag ccgcggagga
840
ggacagtgag ggaggaatgg aaacgagaga tgtgaagttg gcagccgggg catggcgttc
900
aagattttgg agatgaactg attccgccca aatagaatca tgtttatttt ttcagctctc
960
ccttttatca ttattcacac tcctctgccc tcgatttgca tgaagttgaa aattgttgcg
1020
atttattttt tcaagagatc atgtttttaa agtgtc
1056
```

```
<210> 4116
<211> 151
<212> PRT
<213> Homo sapiens
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<400> 4116
Met Lys Phe Glu Ala Ser Ala Phe Ser Tyr Tyr Gly Val Met Ala Leu
 1               5                  10                  15
Thr Ala Ser Pro Gly Glu Asn Lys Ser Pro Pro Arg Pro Cys Gly Leu
            20                  25                  30
Asn His Ser Asp Ser Leu Ser Arg Ser Asp Arg Ile Asp Ala Val Thr
        35                  40                  45
Pro Thr Leu Gly Ser Ser Asn Asn Gln Leu Asn Ser Ser Leu Leu Gln
    50                  55                  60
Val Tyr Ile Pro Asp Tyr Ser Val Arg Ala Leu Ser Asp Leu Gln Phe
65                  70                  75                  80
Val Lys Ile Ser Arg Gln Gln Tyr Gln Asn Ala Leu Met Ala Ser Arg
                85                  90                  95
Met Asp Lys Thr Pro Gln Ser Ser Asp Ser Glu Asn Thr Lys Ile Glu
            100                 105                 110
Leu Thr Leu Thr Glu Leu His Asp Gly Leu Pro Asp Glu Thr Ala Asn
        115                 120                 125
Leu Leu Asn Glu Gln Asn Cys Val Thr His Ser Lys Ala Asn His Ser
    130                 135                 140
Leu His Asn Glu Gly Ala Ile
145                 150
```

```
<210> 4117
<211> 973
<212> DNA
<213> Homo sapiens
```

```
<400> 4117
nnagaccgcg ttgtcgtctc tccggggggag tgagggctga aggggtggct cctgcagtcc
60
ggctgccaga ggctccccag gcaccggtcc ctgcaggcat ttggcactag ggaaggttcc
120
tgggtctcct gggcaccact cagagctctg tgcctgtggg tccaacaagt ccagagctgt
180
tggcactggt gcttcccggc tctggggcag tccgggggct gcaagtggaa acccagggc
240
```

cctgcctggc tggggactaa gcagtgtcca gagtgggggc agggagaaca gagggcttga
300
ggagggaggc agaggcctgt cagtgggtac cctcctccct cccatgcaca tctaggtccc
360
caggcacagc ctgctgtaca agcacacgac tggcctgggt gtgggcgttg gcctcagcca
420
cctggaggca tcttggagtg ggagaggtgt gttggttgcc caaggccagc cagacctgcg
480
tcaccgtcac cgggagaagc tacccccgccc ccttcttcag ggatctccgc agtgaagcct
540
cctctaagga gtcctaggac tctcccttta gagttgggga caggggggtg tgtttgtgct
600
ggcctgggtc caaatactcc agggtgtcag ctccatcccc ctgctgtcct ctgtccccag
660
gggctgggaa gacaccaacg gctgtgaaca aactcgctga tttcttcacc aagacggtga
720
ggcggaggca ctggctgcaa aagtccaccc cctctagacc tctgcaacca cagaatcccc
780
agcccaaagg cctttgctgg tttgagttga attcagtgtg gactgaagga aaaacatatc
840
tattcacacc tcagagtgac catccgagct cctggtgact ggaaaaaaga aatgggtcac
900
cctttggcct gcgaggactg ggcgggaggc cccagcccag gcgacacagg agcttccacc
960
tcccttcacg cgt
973

<210> 4118
<211> 128
<212> PRT
<213> Homo sapiens

<400> 4118
Gly Gly Arg Gln Arg Pro Val Ser Gly Tyr Pro Pro Pro Ser His Ala
 1   5   10   15
His Leu Gly Pro Gln Ala Gln Pro Ala Val Gln Ala His Asp Trp Pro
            20   25   30
Gly Cys Gly Arg Trp Pro Gln Pro Pro Gly Gly Ile Leu Glu Trp Glu
        35   40   45
Arg Cys Val Gly Cys Pro Arg Pro Ala Arg Pro Ala Ser Pro Ser Pro
    50   55   60
Gly Glu Ala Thr Pro Pro Pro Ser Ser Gly Ile Ser Ala Val Lys Pro
65   70   75   80
Pro Leu Arg Ser Pro Arg Thr Leu Pro Leu Glu Leu Gly Thr Gly Gly
                85   90   95
Cys Val Cys Ala Gly Leu Gly Pro Asn Thr Pro Gly Cys Gln Leu His
            100   105   110
Pro Pro Ala Val Leu Cys Pro Gln Gly Leu Gly Arg His Gln Arg Leu
        115   120   125

<210> 4119
<211> 649
<212> DNA
<213> Homo sapiens

<400> 4119
nnagatctcc aacctctgac aagttgtcat ggcaaagtcc taagaaggat catggcaatt
60
agggtggctc tccatgtccc atgacgaaac ccaaacactg aatgttgtgc aatcataaaa
120
accaattttc tgaactacaa aaatgatcga accataaaaa tcaggaacac ctctggttcc
180
agtcagacta aagatcagag gatccctggt cgtccagcct tccaacatcc ctgaccttct
240
gaagtctaag atctctagct gggatgtgct tcttctcctt tcttcttact gtaacacctc
300
ttcctacaga gctctggcct ctctacatgg attgggaacc agatgttgtc cctgagcagc
360
ctcccaccgt gggctgtcac cctgctggca tgcatcctcg tgtccattgt cactgagttt
420
gtgagcaacc cagcaaccat caccatcttc ctgcccatcc tgtgcagcct ggtgagtaat
480
gcggagctcc cagacatcca gacaggctgt cccaggggcc tggagtggca ggcctggctc
540
agggcagctt ccgtagctgt aggctctcct ctggttactg cccacagcct tcactaattg
600
gtgttcaatt cctactttga aaaatgaagt ttttcaaata gcaactagt
649

<210> 4120
<211> 100
<212> PRT
<213> Homo sapiens

<400> 4120
His Leu Phe Leu Gln Ser Ser Gly Leu Ser Thr Trp Ile Gly Asn Gln
  1   5   10   15
Met Leu Ser Leu Ser Ser Leu Pro Pro Trp Ala Val Thr Leu Leu Ala
             20   25   30
Cys Ile Leu Val Ser Ile Val Thr Glu Phe Val Ser Asn Pro Ala Thr
         35   40   45
Ile Thr Ile Phe Leu Pro Ile Leu Cys Ser Leu Val Ser Asn Ala Glu
     50   55   60
Leu Pro Asp Ile Gln Thr Gly Cys Pro Arg Gly Leu Glu Trp Gln Ala
65   70   75   80
Trp Leu Arg Ala Ala Ser Val Ala Val Gly Ser Pro Leu Val Thr Ala
                 85   90   95
His Ser Leu His
             100

<210> 4121
<211> 2490
<212> DNA
<213> Homo sapiens

<400> 4121
cgggccaggg gctgcgcggg cccttgcggc cgggcagtct ttctggcctt cgggctaggg
60

3304

```
ctgggcctca tcgaggaaaa acaggcggag agccggcggg cggtctcggc ctgtcaggag
120
atccaggcaa tttttaccca gaaaagcaag ccggggcctg acccgttgga cacgagacgc
180
ttgcagggct ttcggctgga ggagtatctg atagggcagt ccattggtaa gggctgcagt
240
gctgctgtgt atgaagccac catgcctaca ttgccccaga acctggaggt gacaaagagc
300
accgggttgc ttccagggag aggcccaggt accagtgcac caggagaagg gcaggagcga
360
gctccggggg cccctgcctt ccccttggcc atcaagatga tgtggaacat ctcggcaggt
420
tcctccagcg aagccatctt gaacacaatg agccaggagc tggtcccagc gagccgagtg
480
gccttggctg gggagtatgg agcagtcact tacagaaaat ccaagagagg tcccaagcaa
540
ctagcccctc accccaacat catccgggtt ctccgcgcct tcacctcttc cgtgccgctg
600
ctgccagggg ccctggtcga ctaccctgat gtgctgccct cacgcctcca ccctgaaggc
660
ctgggccatg gccggacgct gttcctcgtt atgaagaact atccctgtac cctgcgccag
720
tacctttgtg tgaacacacc cagcccccgc ctcgccgcca tgatgctgct gcagctgctg
780
gaaggcgtgg accatctggt tcaacagggc atcgcgcaca gagacctgaa atccgacaac
840
atccttgtgg agctggaccc agacggctgc ccctggctgg tgatcgcaga ttttggctgc
900
tgcctggctg atgagagcat cggcctgcag ttgcccttca gcagctggta cgtggatcgg
960
ggcggaaacg gctgtctgat ggccccagag gtgtccacgg cccgtcctgg ccccagggca
1020
gtgattgact acagcaaggc tgatgcctgg gcagtgggag ccatcgccta tgaaatcttc
1080
gggcttgtca tcccttcta cggccagggc aaggcccacc ttgaaagccg cagctaccaa
1140
gaggctcagc tacctgcact gcccgagtca gtgcctccag acgtgagaca gttggtgagg
1200
gcactgctcc agcgagaggc cagcaagaga ccatctgccc gagtagccgc aaatgtgctt
1260
catctaagcc tctggggtga acatattcta gccctgaaga atctgaagtt agacaagatg
1320
gttggctggc tcctccaaca atcggccgcc actttgttgg ccaacaggct cacagagaag
1380
tgttgtgtgg aaacaaaaat gaagatgctc tttctggcta acctggagtg tgaaacgctc
1440
tgccaggcag ccctcctcct ctgctcatgg agggcagccc tgtgatgtcc ctgcatggag
1500
ctggtgaatt actaaaagaa cttggcatcc tctgtgtcgt gatggtctgt gaatggtgag
1560
ggtgggagtc aggagacaag acagcgcaga gagggctggt tagccggaaa aggcctcggg
1620
cttggcaaat ggaagaactt gagtgagagt tcagtctgca gtcctgtgct cacagacatc
1680
```

3305

```
tgaaaagtga atggccaagc tggtctagta gatgaggctg gactgaggag gggtaggcct
1740
gcatccacag agaggatcca ggccaaggca ctggctgtca gtggcagagt ttggctgtga
1800
cctttgcccc taacacgagg aactcgtttg aagggggcag cgtagcatgt ctgatttgcc
1860
acctggatga aggcagacat caacatgggt cagcacgttc agttacggga gtgggaaatt
1920
acatgaggcc tgggcctctg cgttcccaag ctgtgcgttc tggaccagct actgaattat
1980
taatctcact tagcgaaagt gacggatgag cagtaagtaa gtaagtgtgg ggatttaaac
2040
ttgagggtgt ccctcctgac tagcctctct tacaggaatt gtgaaatatt aaatgcaaat
2100
ttacaactgc agatgacgta tgtgccttga actgaatatt tggctttaag aatgattctt
2160
cttatactct gaaggtgaga atattttgtg ggcaggtatc aacattgggg aagagagaga
2220
tttcatgtct aactaactaa ctttatacat gatttttagg aagctattgc ctaaatcagc
2280
gtcaacatgc agtaaaggtt gtcttcaact gagctgttct agttttctct tacccagcac
2340
tgtcatctag attttccatt tcagtgattc ccacccctcg gtctactagc aacaacaact
2400
ttcttgtatc ctttgaggag acgttaggga gaaccatcat ttcacagtta aaagaaagac
2460
agtccagtcc taggcaaaat ttcatgaagc
2490


<210> 4122
<211> 494
<212> PRT
<213> Homo sapiens

<400> 4122
Arg Ala Arg Gly Cys Ala Gly Pro Cys Gly Arg Ala Val Phe Leu Ala
1               5                   10                  15
Phe Gly Leu Gly Leu Gly Leu Ile Glu Glu Lys Gln Ala Glu Ser Arg
            20                  25                  30
Arg Ala Val Ser Ala Cys Gln Glu Ile Gln Ala Ile Phe Thr Gln Lys
            35                  40                  45
Ser Lys Pro Gly Pro Asp Pro Leu Asp Thr Arg Arg Leu Gln Gly Phe
        50                  55                  60
Arg Leu Glu Glu Tyr Leu Ile Gly Gln Ser Ile Gly Lys Gly Cys Ser
65                  70                  75                  80
Ala Ala Val Tyr Glu Ala Thr Met Pro Thr Leu Pro Gln Asn Leu Glu
                85                  90                  95
Val Thr Lys Ser Thr Gly Leu Leu Pro Gly Arg Gly Pro Gly Thr Ser
            100                 105                 110
Ala Pro Gly Glu Gly Gln Glu Arg Ala Pro Gly Ala Pro Ala Phe Pro
        115                 120                 125
Leu Ala Ile Lys Met Met Trp Asn Ile Ser Ala Gly Ser Ser Ser Glu
    130                 135                 140
Ala Ile Leu Asn Thr Met Ser Gln Glu Leu Val Pro Ala Ser Arg Val
```

```
145                 150                 155                 160
Ala Leu Ala Gly Glu Tyr Gly Ala Val Thr Tyr Arg Lys Ser Lys Arg
                165                 170                 175
Gly Pro Lys Gln Leu Ala Pro His Pro Asn Ile Ile Arg Val Leu Arg
                180                 185                 190
Ala Phe Thr Ser Ser Val Pro Leu Leu Pro Gly Ala Leu Val Asp Tyr
                195                 200                 205
Pro Asp Val Leu Pro Ser Arg Leu His Pro Glu Gly Leu Gly His Gly
        210                 215                 220
Arg Thr Leu Phe Leu Val Met Lys Asn Tyr Pro Cys Thr Leu Arg Gln
225                 230                 235                 240
Tyr Leu Cys Val Asn Thr Pro Ser Pro Arg Leu Ala Ala Met Met Leu
                245                 250                 255
Leu Gln Leu Leu Glu Gly Val Asp His Leu Val Gln Gln Gly Ile Ala
                260                 265                 270
His Arg Asp Leu Lys Ser Asp Asn Ile Leu Val Glu Leu Asp Pro Asp
                275                 280                 285
Gly Cys Pro Trp Leu Val Ile Ala Asp Phe Gly Cys Cys Leu Ala Asp
        290                 295                 300
Glu Ser Ile Gly Leu Gln Leu Pro Phe Ser Ser Trp Tyr Val Asp Arg
305                 310                 315                 320
Gly Gly Asn Gly Cys Leu Met Ala Pro Glu Val Ser Thr Ala Arg Pro
                325                 330                 335
Gly Pro Arg Ala Val Ile Asp Tyr Ser Lys Ala Asp Ala Trp Ala Val
                340                 345                 350
Gly Ala Ile Ala Tyr Glu Ile Phe Gly Leu Val Asn Pro Phe Tyr Gly
                355                 360                 365
Gln Gly Lys Ala His Leu Glu Ser Arg Ser Tyr Gln Glu Ala Gln Leu
                370                 375                 380
Pro Ala Leu Pro Glu Ser Val Pro Pro Asp Val Arg Gln Leu Val Arg
385                 390                 395                 400
Ala Leu Leu Gln Arg Glu Ala Ser Lys Arg Pro Ser Ala Arg Val Ala
                405                 410                 415
Ala Asn Val Leu His Leu Ser Leu Trp Gly Glu His Ile Leu Ala Leu
                420                 425                 430
Lys Asn Leu Lys Leu Asp Lys Met Val Gly Trp Leu Leu Gln Gln Ser
                435                 440                 445
Ala Ala Thr Leu Leu Ala Asn Arg Leu Thr Glu Lys Cys Cys Val Glu
        450                 455                 460
Thr Lys Met Lys Met Leu Phe Leu Ala Asn Leu Glu Cys Glu Thr Leu
465                 470                 475                 480
Cys Gln Ala Ala Leu Leu Leu Cys Ser Trp Arg Ala Ala Leu
                485                 490
```

```
<210> 4123
<211> 1095
<212> DNA
<213> Homo sapiens

<400> 4123
ctaagcactc caccttgccg aaatgcgcgg cccagtgcac gggcgtccag ccatagaagg
60
agtcctcaga ggccaggtgg gcgtggggtg tctgctgcag cagcgagcag agcgtggcca
120
```

```
ggtccccgtc gcggcaggcg cggtgcagcg ggaaacggag cgagagcagc tcctcgctgg
180
agaagcccgc ctctacgccc gcgctccgct cggcagcctg tgggacgccg ccgcagcgct
240
aatctcgttc ctttgtgctg cggcggcggc ttctcgagtc ctccccgacg cgtcctctag
300
gccagcgagc cccgcgctct ccggtgacgg accatgtcgg cggcgggagc gggcgcgggc
360
gtagaggcgg gcttctccag cgaggagctg ctctcgctcc gtttcccgct gcaccgcgcc
420
tgccgcgacg gggacctggc cacgctctgc tcgctgctgc agcagacacc ccacgcccac
480
ctggcctctg aggactcctt ctatggctgg acgcccgtgc actgggccgc gcatttcggc
540
aagttggagt gcttagtgca gttggtgaga gcgggagcca cactcaacgt ctccaccaca
600
cggtacgcgc agacgccagc ccacattgca gcctttgggg acatcctca gtgcctggtc
660
tggctgattc aagcaggagc caacattaac aaaccggatt gtgagggtga aactcccatt
720
cacaaggcag ctcgctctgg agcctagaa tgcatcagtg cccttgtggc gaatggggct
780
cacgtcgatt cacagcacta acaaaatgga tgcggttttc acccttaaat gttgagtgta
840
agctatagag ctataataac caaaataacc aatatcagct ttttttttt accttgttat
900
gaataattca tgaaaattaa ttataaacca cattattcta atcagaaatg tgaacattta
960
gacttcggag gaaattaaac ccacaaaact agtttaaccc tttggtttcc atttcattgc
1020
tttgactctg tattatattg aaaatagatc ctagacagca aaaccataca ggctaatgca
1080
cgacgtgtgt ggtaa
1095
```

```
<210> 4124
<211> 155
<212> PRT
<213> Homo sapiens
```

```
<400> 4124
Met Ser Ala Ala Gly Ala Gly Ala Gly Val Glu Ala Gly Phe Ser Ser
 1               5                  10                  15
Glu Glu Leu Leu Ser Leu Arg Phe Pro Leu His Arg Ala Cys Arg Asp
            20                  25                  30
Gly Asp Leu Ala Thr Leu Cys Ser Leu Leu Gln Gln Thr Pro His Ala
        35                  40                  45
His Leu Ala Ser Glu Asp Ser Phe Tyr Gly Trp Thr Pro Val His Trp
    50                  55                  60
Ala Ala His Phe Gly Lys Leu Glu Cys Leu Val Gln Leu Val Arg Ala
65                  70                  75                  80
Gly Ala Thr Leu Asn Val Ser Thr Thr Arg Tyr Ala Gln Thr Pro Ala
                85                  90                  95
His Ile Ala Ala Phe Gly Gly His Pro Gln Cys Leu Val Trp Leu Ile
```

```
           100                   105                   110
Gln Ala Gly Ala Asn Ile Asn Lys Pro Asp Cys Glu Gly Glu Thr Pro
       115                   120                   125
Ile His Lys Ala Ala Arg Ser Gly Ser Leu Glu Cys Ile Ser Ala Leu
   130                   135                   140
Val Ala Asn Gly Ala His Val Asp Ser Gln His
145                   150                   155
```

```
<210> 4125
<211> 4711
<212> DNA
<213> Homo sapiens
```

```
<400> 4125
gcggcggcgg gggcagcgcg cgcgtgtct gtgcgctgcg gtcgctcggg accgggaccg
60
gggcgaggcg ccgcggggct gagcccagca gacattgcgt tggcctccga gcagggcgca
120
tcatgcagcg ttcgcgcacc ggagagaaaa ctgagaatga aattgctttg caagctaaa
180
atgagctcga ttcaggactg gggtgaagag gtagaggaag gagctgttta ccatgtcacc
240
ctcaaaagag tccagattca acaggctgcc aataaaggag caagatggct aggggttgaa
300
ggggaccagc tgcctccagg acacacagtc agtcaatatg aaacctgtaa gatcaggacc
360
ataaaagctg gcaccttgga gaagcttgtg gagaacctgc tgacagcttt tggggacaat
420
gactttacct atatcagcat ctttctttca acgtacagag gctttgcctc cactaaagaa
480
gtgctggaac tactgctgga caggtatgga aacctgacaa gcccaaactg tgaagaagat
540
ggaagccaaa gttcatcaga gtccaaaatg gtgatcagga atgcaatcgc ttccatacta
600
agggcctggc ttgaccagtg tgcagaagac ttccgagagc cccctcactt cccttgctta
660
cagaaactgc tggattatct cacacggatg atgccgggct ctgacccaga aagaagagca
720
caaaatcttc ttgagcagtt tcagaagcaa gaagtggaaa ctgacaatgg cttcccaac
780
acgatctcct tcagcctgga agaggaagag gaactggagg gtggagagtc agcagaattc
840
acgtgcttct cagaagatct agtggcagag cagctgacct acatggatgc acaactcttc
900
aagaaagtag tgcctcacca ctgcctgggc tgcatttggt ctcgaaggga taagaaggaa
960
aacaaacatt tggctcctac gatccgtgcc accatctctc agtttaatac cctcaccaaa
1020
tgtgttgtca gcaccatcct ggggggcaaa gaactcaaaa ctcagcagag agccaaaatc
1080
attgagaagt ggatcaacat cgctcatgaa tgtagactcc tgaagaattt ttcctccttg
1140
agggccatcg tttcggcact gcagtctaat tccatctatc ggttaaaaaa gacttgggct
1200
```

```
gccgtcccaa gggaccgaat gctgatgttt gaagaacttt cagatatctt ctcagaccat
1260
aataaccatt tgaccagccg agaactactg atgaaggaag gaacctcaaa atttgcaaac
1320
ctggacagca gtgtgaaaga aaaccagaag cgtacccaga ggcggctgca gctccagaag
1380
gacatgggtg tgatgcaggg aactgtgccc tacctgggca ccttcctgac tgacctgacc
1440
atgcttgaca ctgcccttca ggactacatc gagggtggac tgataaactt tgagaaaagg
1500
agaagggaat ttgaagtgat tgcccagata aagctcttac agtctgcctg caacagctat
1560
tgcatgaccc cagaccaaaa gttcatccag tggttccaga ggcagcagct cctgacagag
1620
gaggagagct atgccctgtc atgtgagatt gaagcagctg ctggcgccag caccacctcg
1680
cccaagcctc ggaagagcat ggtgaagaga ctcagcctac tgtttctagg gtctgacatg
1740
atcaccagtc ccactcccac caaagagcag cccaagtcca ctgccagcgg gagctctggt
1800
gaaagcatgg actctgtcag cgtgtcatcc tgcgagtcga accactcaga ggctgaggag
1860
ggctccatta ctcccatgga cacccctgat gagcctcaaa aaaagctctc tgagtcctcc
1920
tcatcctgtt cttctatcca ttccatggac acaaattcct cagggatgtc ttccttaatc
1980
aaccccctct cctcccctcc gtcctgcaac aacaacccca aaatccacaa gcgctctgtc
2040
tcggtgacgt ccattacctc gactgtgctg cctcctgttt acaaccaaca gaatgaagac
2100
acctgcataa tccgcatcag tgtggaagac aataacggca acatgtacaa gagcatcatg
2160
ttgacgagcc aggataaaac ccccgctgtg atccagagag ccatgctgaa gcacaatctg
2220
gactcagacc ccgccgagga gtacgagctg gtgcaggtca tctcggagga caaagaactt
2280
gtgattccag actcagcaaa tgtctttttat gccatgaaca gccaagtgaa ctttgacttc
2340
attttgcgca aaagaactc catggaagaa caagtgaaac tgcgtagccg gaccagcttg
2400
acgttgccca ggacagctaa acggggctgc tggagtaaca gacacagcaa aatcaccctc
2460
tgaagggagg gaccagtggc cccttgtttg ccaaaggcag agtggggctg agaaacaggc
2520
tgcggtgatt gcaattacca tccggtgttc gaggatcatt ggtgaagtca gcagatattt
2580
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2640
tttgacatga aaaggatgaa cgattcactg attctctttg actcatttga gactaaaatg
2700
cagaattacc aacatttaaa acatatatat gcacatgtat ttggtatgca tgtgtatcta
2760
tataaaaata tataagaggg actttatggg atagtatgga ctatggaaaa acaaatttgc
2820
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3310

```
acaatggcct gggaagttga ggtcactttt tacagggaaa tagaagaaac tgagaaccta
2880
gtctcgtata ttctgagtaa atggaatcag tcctgggaat agagagtgtc ctttgtgcca
2940
gtattacaag aagcccaaac tttattttta taaagggaga ggatgacttt ctcaatcaag
3000
tgccaccaga taaaaacaac tgcagaggct ggaactgcca caggctgtat gaaaggccac
3060
tttggaaagg gtttggatga gctggtggcc ttcaacctct gcctgcatct gccactttct
3120
gctaccctag ggaggccagg aggagcttcg gaggaccatc gccccactgg tctagccatc
3180
atgacacctc tggaggtgtc aagctcctga aacaagctca tttcagtttc tggcaacccc
3240
gtgtatttcc gttttccccc taaagaacat atcataatca ttgcacaaat aaccatgttc
3300
tttggtaatg aagccagaaa agaaagcgca aaagaatggt gactcatttg gactcttatc
3360
tgtcttggaa tgtcactgct tcattgcctt ctctgattgc cttttgcatg taaaactatg
3420
tgtctggagt cttttgccat ctggatctta gtacctcttt attatgtgca atttattcct
3480
caggtgtgga aatttctact gcaattgact acgtttgatt attttgagct tgtgaaagat
3540
ttctgaacag tgattgtccc gttaatagcc cctcagaaga tgttccctgc tgataacagc
3600
atcctatttt acttactttt atagcattac tgtgcctagt cgtggggaaa gagatggggc
3660
tgtatagatt atctgaatca tttgtctaag aggtacattc ttccagatgg aatcaataac
3720
tttttttttt ccaggttccc gtgcttgcta tcacagtatc attgttaagt gacacttttg
3780
tctctcataa caccatcaca ctcttccttc caagtctgag ctgtgctggg gtttgaacta
3840
aaagccatat gtggaatatt gacatgtgta agaagcactt tcagaatgtt gtccttttta
3900
agaaatgatt ctcaaaatac cagtttttat tccaaaaatt tagagaacaa acccggaata
3960
tgaagtgcag attgtaacat ggagctattt ttttttccta atcccataat acagctccta
4020
aaagttgtgt gggatttgcg ttgcataaat agccatgtga attccacaag aagcaccagg
4080
gaaagtttag agatttgcgg caatggaccg aagaacgggc caggaagtcc tccaatttcc
4140
tttggtcttt ccaggagatt ggactacaca ttgtaaagac tgactgggtt tcaactagtc
4200
aaaaagcact ttcttctgtt ttcaatccct gttcgatttg tgcttctgtg cttgtaggag
4260
agatggccag ggtggcagcc ctcatgcagg ttgaagtata tgtagcctca gcctgatatt
4320
cttggtgcga aggtaaaaaa aaaaaaataa ataaaaccat tggcctggtt gagggcgtga
4380
ccaccaagac atatatgttg tgcccgtgtt catcctgtgt atttatactg tatatgtaga
4440
```

```
gtctagattt atatactgca atgtaaaata tatatatatt tacctttttt aaagacaatg
4500
gaaattccaa gtagctaaaa cttagcttca tttatttaat gccactttaa atgtcttaaa
4560
tttgtttcct ggtggacagc cgggtaatgc ttttagctgc tcgcatgctt gtctttctgc
4620
atctccatca tctgtttacc ttttggttaa actaataaac tagtttggga cttggctggc
4680
atgtgctgcc agacccaaag ggaaaaaaaa a
4711
```

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<210> 4126
<211> 820
<212> PRT
<213> Homo sapiens


<400> 4126
Ala Ala Ala Gly Ala Ala Arg Arg Val Ser Val Arg Cys Gly Arg Ser
 1               5                  10                  15
Gly Pro Gly Pro Gly Arg Gly Ala Ala Gly Leu Ser Pro Ala Asp Ile
            20                  25                  30
Ala Leu Ala Ser Glu Gln Gly Ala Ser Cys Ser Val Arg Ala Pro Glu
        35                  40                  45
Arg Lys Leu Arg Met Lys Leu Leu Trp Gln Ala Lys Met Ser Ser Ile
    50                  55                  60
Gln Asp Trp Gly Glu Glu Val Glu Glu Gly Ala Val Tyr His Val Thr
65                  70                  75                  80
Leu Lys Arg Val Gln Ile Gln Gln Ala Ala Asn Lys Gly Ala Arg Trp
                85                  90                  95
Leu Gly Val Glu Gly Asp Gln Leu Pro Pro Gly His Thr Val Ser Gln
            100                 105                 110
Tyr Glu Thr Cys Lys Ile Arg Thr Ile Lys Ala Gly Thr Leu Glu Lys
            115                 120                 125
Leu Val Glu Asn Leu Leu Thr Ala Phe Gly Asp Asn Asp Phe Thr Tyr
        130                 135                 140
Ile Ser Ile Phe Leu Ser Thr Tyr Arg Gly Phe Ala Ser Thr Lys Glu
145                 150                 155                 160
Val Leu Glu Leu Leu Leu Asp Arg Tyr Gly Asn Leu Thr Ser Pro Asn
                165                 170                 175
Cys Glu Glu Asp Gly Ser Gln Ser Ser Ser Glu Ser Lys Met Val Ile
            180                 185                 190
Arg Asn Ala Ile Ala Ser Ile Leu Arg Ala Trp Leu Asp Gln Cys Ala
            195                 200                 205
Glu Asp Phe Arg Glu Pro Pro His Phe Pro Cys Leu Gln Lys Leu Leu
        210                 215                 220
Asp Tyr Leu Thr Arg Met Met Pro Gly Ser Asp Pro Glu Arg Arg Ala
225                 230                 235                 240
Gln Asn Leu Leu Glu Gln Phe Gln Lys Gln Glu Val Glu Thr Asp Asn
                245                 250                 255
Gly Leu Pro Asn Thr Ile Ser Phe Ser Leu Glu Glu Glu Glu Glu Leu
            260                 265                 270
Glu Gly Gly Glu Ser Ala Glu Phe Thr Cys Phe Ser Glu Asp Leu Val
            275                 280                 285
Ala Glu Gln Leu Thr Tyr Met Asp Ala Gln Leu Phe Lys Lys Val Val
```

3312

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              290                     295                    300
Pro His His Cys Leu Gly Cys Ile Trp Ser Arg Arg Asp Lys Lys Glu
305                    310                    315                    320
Asn Lys His Leu Ala Pro Thr Ile Arg Ala Thr Ile Ser Gln Phe Asn
                     325                    330                    335
Thr Leu Thr Lys Cys Val Val Ser Thr Ile Leu Gly Gly Lys Glu Leu
                     340                    345                    350
Lys Thr Gln Gln Arg Ala Lys Ile Ile Glu Lys Trp Ile Asn Ile Ala
                     355                    360                    365
His Glu Cys Arg Leu Leu Lys Asn Phe Ser Ser Leu Arg Ala Ile Val
        370                    375                    380
Ser Ala Leu Gln Ser Asn Ser Ile Tyr Arg Leu Lys Lys Thr Trp Ala
385                    390                    395                    400
Ala Val Pro Arg Asp Arg Met Leu Met Phe Glu Glu Leu Ser Asp Ile
                     405                    410                    415
Phe Ser Asp His Asn Asn His Leu Thr Ser Arg Glu Leu Leu Met Lys
                     420                    425                    430
Glu Gly Thr Ser Lys Phe Ala Asn Leu Asp Ser Ser Val Lys Glu Asn
                     435                    440                    445
Gln Lys Arg Thr Gln Arg Arg Leu Gln Leu Gln Lys Asp Met Gly Val
        450                    455                    460
Met Gln Gly Thr Val Pro Tyr Leu Gly Thr Phe Leu Thr Asp Leu Thr
465                    470                    475                    480
Met Leu Asp Thr Ala Leu Gln Asp Tyr Ile Glu Gly Gly Leu Ile Asn
                     485                    490                    495
Phe Glu Lys Arg Arg Arg Glu Phe Glu Val Ile Ala Gln Ile Lys Leu
                     500                    505                    510
Leu Gln Ser Ala Cys Asn Ser Tyr Cys Met Thr Pro Asp Gln Lys Phe
        515                    520                    525
Ile Gln Trp Phe Gln Arg Gln Gln Leu Leu Thr Glu Glu Glu Ser Tyr
        530                    535                    540
Ala Leu Ser Cys Glu Ile Glu Ala Ala Ala Gly Ala Ser Thr Thr Ser
545                    550                    555                    560
Pro Lys Pro Arg Lys Ser Met Val Lys Arg Leu Ser Leu Leu Phe Leu
                     565                    570                    575
Gly Ser Asp Met Ile Thr Ser Pro Thr Pro Thr Lys Glu Gln Pro Lys
                     580                    585                    590
Ser Thr Ala Ser Gly Ser Ser Gly Glu Ser Met Asp Ser Val Ser Val
                     595                    600                    605
Ser Ser Cys Glu Ser Asn His Ser Glu Ala Glu Glu Gly Ser Ile Thr
        610                    615                    620
Pro Met Asp Thr Pro Asp Glu Pro Gln Lys Lys Leu Ser Glu Ser Ser
625                    630                    635                    640
Ser Ser Cys Ser Ser Ile His Ser Met Asp Thr Asn Ser Ser Gly Met
                     645                    650                    655
Ser Ser Leu Ile Asn Pro Leu Ser Ser Pro Ser Cys Asn Asn Asn
                     660                    665                    670
Pro Lys Ile His Lys Arg Ser Val Ser Val Thr Ser Ile Thr Ser Thr
        675                    680                    685
Val Leu Pro Pro Val Tyr Asn Gln Gln Asn Glu Asp Thr Cys Ile Ile
        690                    695                    700
Arg Ile Ser Val Glu Asp Asn Asn Gly Asn Met Tyr Lys Ser Ile Met
705                    710                    715                    720
Leu Thr Ser Gln Asp Lys Thr Pro Ala Val Ile Gln Arg Ala Met Leu
```

```
                       725                    730                    735
Lys His Asn Leu Asp Ser Asp Pro Ala Glu Glu Tyr Glu Leu Val Gln
                   740                    745                750
Val Ile Ser Glu Asp Lys Glu Leu Val Ile Pro Asp Ser Ala Asn Val
               755                    760                765
Phe Tyr Ala Met Asn Ser Gln Val Asn Phe Asp Phe Ile Leu Arg Lys
           770                    775                780
Lys Asn Ser Met Glu Glu Gln Val Lys Leu Arg Ser Arg Thr Ser Leu
       785                    790                    795                800
Thr Leu Pro Arg Thr Ala Lys Arg Gly Cys Trp Ser Asn Arg His Ser
                   805                    810                815
Lys Ile Thr Leu
               820
```

<210> 4127
<211> 2189
<212> DNA
<213> Homo sapiens

<400> 4127
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ccatgcttcc tgccctcggc caccagcaag ctgtcgggcg cagtggagca gtggctgagt
60
gcagctgagc ggctgtatgg gccctacatg tggggcaggt acgacattgt cttcctgcca
120
ccctccttcc ccatcgtggc catggagaac ccctgcctca ccttcatcat ctcctccatc
180
ctggagagcg atgagttcct ggtcatcgat gtcatccacg aggtggccca cagttggttc
240
ggcaacgctg tcaccaacgc acgtgggaa gagatgtggc tgagcgaggg cctggccacc
300
tatgcccagc gccgtatcac caccgagacc tacggtgctg ccttcacctg cctggagact
360
gccttccgcc tggacgccct gcaccggcag atgaagcttc tgggagagga cagcccggtc
420
agcaaactgc aggtcaagct ggagccagga gtgaatccca gccacctgat gaacctgttc
480
acctacgaga agggctactg cttcgtgtac tacctgtccc agctctgcgg agacccacag
540
cgctttgatg actttctccg agcctatgtg gagaagtaca agttcaccag cgtggtggcc
600
caggacctgc tggactcctt cctgagcttc ttcccggagc tgaaggagca gagcgtggac
660
tgccgggcag ggctggaatt cgagcgctgg ctcaatgcca caggcccgcc gctggctgag
720
ccggacctgt ctcagggatc cagcctgacc cggcccgtgg aggcccttt ccagctgtgg
780
accgcagaac tctggacca ggcagctgcc tccgccagcg ccattgacat ctccaagtgg
840
aggaccttcc agacagcact cttcctggac cggctcctgg atgggtcccc gctgccgcag
900
gaggtggtga tgagcctgtc caagtgctac tcctccctgc tggactcgat gaacgctgag
960
atccgcatcc gctggctgca gattgtggtc cgcaacgact actatcctga cctccacagg
1020
```

```
gtgcggcgct tcctggagag ccagatgtca cgcatgtaca ccatcccgct gtacgaggac
1080
ctctgcaccg gtgccctcaa gtccttcgcg ctggaggtct tctaccagac gcagggccgg
1140
ctgcacccca acctgcgcag agccatccag cagatcctgt cccagggcct gggctccagc
1200
acagagcccg cctcagagcc cagcacggag ctgggcaagg ctgaagcaga cacagactcg
1260
gacgcacagg ccctgctgct ggggacgag gcccccagca gtgccatctc tctcagggac
1320
gtcaatgtgt ctgcctagcc ctgttggcgg gctgaccctc gacctcccag acaccacaat
1380
tgtgccttct gtgggccagg cctgccatga ctgcgtctcg gctctggcca tgagctctgc
1440
ccaggcccac aagcccctcc cctgggctct cccaggcagg gagaatgggg agagggacct
1500
ccttgtgtct ggcagagacc tgtggacctg gcctccccac tcccagctct cttgcactgc
1560
aggccctggg gccagcccgc acacaccatg cctcctgtct caacactgac agctgtgcct
1620
agccccggat gccagcacct gccaggtgcc gccccggggc aagggcccca gcagccctat
1680
ggtgaccgcc acactgtgcc ttaatgtctg ccggggggccc aggctgtgct gtccctgcag
1740
cacgcctcct tgcagggatc tgagccaccc tccccgcaca gccctgcacc ccgcccctag
1800
ggttggcagc ctcagttggc ccctggcaga ggaacaagga cacagacatt ccctcagtgt
1860
gggggggcagg ggacacaggg agaggatggt tgtccctggg gagggccctc tggccccagg
1920
caaccttagc ccctcagaac agggagtccc aggacccagg gagagtgtgg ggacaggaca
1980
gcctgtctct tgtagcttcc tggggtggga ggcacagggg caaagcaata ccccagggaa
2040
agtgggaggt ggtgctggtg ctctctccag gcccaccatg ctgggagagg cggccagagc
2100
ctggggcctc agcctggga ctgctgtgat ggggtatcac ggtgatggtc ccattaaact
2160
tccactctgc aaacctgaaa aaaaaaaaa
2189


<210> 4128
<211> 445
<212> PRT
<213> Homo sapiens


<400> 4128
Pro Cys Phe Leu Pro Ser Ala Thr Ser Lys Leu Ser Gly Ala Val Glu
1               5                   10                  15
Gln Trp Leu Ser Ala Ala Glu Arg Leu Tyr Gly Pro Tyr Met Trp Gly
            20                  25                  30
Arg Tyr Asp Ile Val Phe Leu Pro Pro Ser Phe Pro Ile Val Ala Met
        35                  40                  45
Glu Asn Pro Cys Leu Thr Phe Ile Ile Ser Ser Ile Leu Glu Ser Asp
```

```
                  50                      55                      60
Glu Phe Leu Val Ile Asp Val Ile His Glu Val Ala His Ser Trp Phe
65                      70                      75                      80
Gly Asn Ala Val Thr Asn Ala Thr Trp Glu Glu Met Trp Leu Ser Glu
                85                      90                      95
Gly Leu Ala Thr Tyr Ala Gln Arg Arg Ile Thr Thr Glu Thr Tyr Gly
                100                     105                     110
Ala Ala Phe Thr Cys Leu Glu Thr Ala Phe Arg Leu Asp Ala Leu His
                115                     120                     125
Arg Gln Met Lys Leu Leu Gly Glu Asp Ser Pro Val Ser Lys Leu Gln
        130                     135                     140
Val Lys Leu Glu Pro Gly Val Asn Pro Ser His Leu Met Asn Leu Phe
145                     150                     155                     160
Thr Tyr Glu Lys Gly Tyr Cys Phe Val Tyr Tyr Leu Ser Gln Leu Cys
                165                     170                     175
Gly Asp Pro Gln Arg Phe Asp Asp Phe Leu Arg Ala Tyr Val Glu Lys
                180                     185                     190
Tyr Lys Phe Thr Ser Val Val Ala Gln Asp Leu Leu Asp Ser Phe Leu
                195                     200                     205
Ser Phe Phe Pro Glu Leu Lys Glu Gln Ser Val Asp Cys Arg Ala Gly
        210                     215                     220
Leu Glu Phe Glu Arg Trp Leu Asn Ala Thr Gly Pro Pro Leu Ala Glu
225                     230                     235                     240
Pro Asp Leu Ser Gln Gly Ser Ser Leu Thr Arg Pro Val Glu Ala Leu
                245                     250                     255
Phe Gln Leu Trp Thr Ala Glu Pro Leu Asp Gln Ala Ala Ala Ser Ala
                260                     265                     270
Ser Ala Ile Asp Ile Ser Lys Trp Arg Thr Phe Gln Thr Ala Leu Phe
        275                     280                     285
Leu Asp Arg Leu Leu Asp Gly Ser Pro Leu Pro Gln Glu Val Val Met
        290                     295                     300
Ser Leu Ser Lys Cys Tyr Ser Ser Leu Leu Asp Ser Met Asn Ala Glu
305                     310                     315                     320
Ile Arg Ile Arg Trp Leu Gln Ile Val Val Arg Asn Asp Tyr Tyr Pro
                325                     330                     335
Asp Leu His Arg Val Arg Arg Phe Leu Glu Ser Gln Met Ser Arg Met
        340                     345                     350
Tyr Thr Ile Pro Leu Tyr Glu Asp Leu Cys Thr Gly Ala Leu Lys Ser
        355                     360                     365
Phe Ala Leu Glu Val Phe Tyr Gln Thr Gln Gly Arg Leu His Pro Asn
        370                     375                     380
Leu Arg Arg Ala Ile Gln Gln Ile Leu Ser Gln Gly Leu Gly Ser Ser
385                     390                     395                     400
Thr Glu Pro Ala Ser Glu Pro Ser Thr Glu Leu Gly Lys Ala Glu Ala
                405                     410                     415
Asp Thr Asp Ser Asp Ala Gln Ala Leu Leu Leu Gly Asp Glu Ala Pro
                420                     425                     430
Ser Ser Ala Ile Ser Leu Arg Asp Val Asn Val Ser Ala
        435                     440                     445
```

```
<210> 4129
<211> 1749
<212> DNA
<213> Homo sapiens
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<400> 4129

ctgggaccag ctctgctcct tgcaccccgc tccctgcctg gacacaggct cactcgctgc
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cttcttctgg gggaaaccag cttcttgcca gccacagctg ctgcctccgc cactggccac
120

cgccctgtc ctgggagtcc cttggcccaa acacccacct gacttagtgg ctcctctgca
180

ggaaaggggg ctgcccctg cgttcctcca tccaatcatg agctggtgcc catcaccact
240

gagaatgcac cagagaatgt agtggaccag ggagcaggag cctcccgggg tggaaacaca
300

cggaaaagcc tcgaggacaa cggctccacc aggtcaccc cgagtgtcca gccccacctc
360

cagcccatca gaaacatgag tgtgagccgg accatggagg acagctgtga gctggacctg
420

gtgtacgtca cagagaggat catcgctgtc tccttcccca gcacagccaa tgaggagaac
480

ttccggagca acctccgtga ggtggcgcag atgctcaagt ccaaacatgg aggcaactac
540

ctgctgttca acctctctga gcggagacct gacatcacga gctccatgc caaggtactg
600

gaatttggct ggcccgacct ccacacccca gccctggaga agatctgcag catctgtaag
660

gccatggaca catggctcaa tgcagaccct cacaatgtcg ttgttctaca caacaaggga
720

aaccgaggca ggataggagt tgtcatcgcg gcttacatgc actacagcaa catttctgcc
780

agtgcggacc aggctctgga ccggtttgca atgaagcggt tctatgagga taagattgtg
840

cccattggcc agccatccca aagaaggtac gtgcattact tcagtggcct gctctccggc
900

tccatcaaaa tgaacaacaa gcccttgttt ctgcaccacg tgatcatgca cggcatcccc
960

aactttgagt ctaaaggagg atgtcggcca tttctccgca tctaccaggc catgcaacct
1020

gtgtacacat ctggcatcta caacatccca ggagacagcc agactagcgt ctgcatcacc
1080

atcgagccag gactgctctt gaagggagac atcttgctga agtgctacca caagaagttc
1140

cgaagcccag cccgagacgt catcttccgt gtgcagttcc acacctgtgc catccatgcc
1200

tggggggttg tctttgggaa ggaggacctt gatgatgctt tcaaagatga tcgatttcca
1260

gagtatggca agtggagtt tgtattttct tatgggccag agaaaattca aggcatggag
1320

cacctggaga acgggccgag cgtgtctgtg gactataaca cctccgaccc cctcatccgc
1380

tgggactcct acgacaactt cagtgggcat cgagatgacg gcatggagga ggtggtggga
1440

cacacgcagg ggccactaga tgggagcctg tatgctaagg tgaagaagaa agactccctg
1500

cacggcagca ccgggggctgt taatgccaca cgtcctacac tgtcggccac ccccaaccac
1560

gtggaacaca cgctttctgt gagcagcgac tcgggcaact ccacagcctc caccaagacc
1620
gacaagaccg acgagcctgt ccccgggggcc tccagtgccc atgctgcccg cactgtgacc
1680
atcctggttt ggcaattcat cgtccaggat gtctgtctcc cgctcagatg ctaacgcccc
1740
accattgac
1749

<210> 4130
<211> 523
<212> PRT
<213> Homo sapiens

<400> 4130
Leu Ser Gly Ser Ser Ala Gly Lys Gly Ala Ala Pro Cys Val Pro Pro
 1   5   10   15
Ser Asn His Glu Leu Val Pro Ile Thr Thr Glu Asn Ala Pro Glu Asn
             20   25   30
Val Val Asp Gln Gly Ala Gly Ala Ser Arg Gly Gly Asn Thr Arg Lys
             35   40   45
Ser Leu Glu Asp Asn Gly Ser Thr Arg Val Thr Pro Ser Val Gln Pro
     50   55   60
His Leu Gln Pro Ile Arg Asn Met Ser Val Ser Arg Thr Met Glu Asp
65   70   75   80
Ser Cys Glu Leu Asp Leu Val Tyr Val Thr Glu Arg Ile Ile Ala Val
                 85   90   95
Ser Phe Pro Ser Thr Ala Asn Glu Glu Asn Phe Arg Ser Asn Leu Arg
             100   105   110
Glu Val Ala Gln Met Leu Lys Ser Lys His Gly Gly Asn Tyr Leu Leu
             115   120   125
Phe Asn Leu Ser Glu Arg Arg Pro Asp Ile Thr Lys Leu His Ala Lys
     130   135   140
Val Leu Glu Phe Gly Trp Pro Asp Leu His Thr Pro Ala Leu Glu Lys
145   150   155   160
Ile Cys Ser Ile Cys Lys Ala Met Asp Thr Trp Leu Asn Ala Asp Pro
                 165   170   175
His Asn Val Val Val Leu His Asn Lys Gly Asn Arg Gly Arg Ile Gly
             180   185   190
Val Val Ile Ala Ala Tyr Met His Tyr Ser Asn Ile Ser Ala Ser Ala
             195   200   205
Asp Gln Ala Leu Asp Arg Phe Ala Met Lys Arg Phe Tyr Glu Asp Lys
     210   215   220
Ile Val Pro Ile Gly Gln Pro Ser Gln Arg Arg Tyr Val His Tyr Phe
225   230   235   240
Ser Gly Leu Leu Ser Gly Ser Ile Lys Met Asn Asn Lys Pro Leu Phe
                 245   250   255
Leu His His Val Ile Met His Gly Ile Pro Asn Phe Glu Ser Lys Gly
             260   265   270
Gly Cys Arg Pro Phe Leu Arg Ile Tyr Gln Ala Met Gln Pro Val Tyr
             275   280   285
Thr Ser Gly Ile Tyr Asn Ile Pro Gly Asp Ser Gln Thr Ser Val Cys
     290   295   300
Ile Thr Ile Glu Pro Gly Leu Leu Leu Lys Gly Asp Ile Leu Leu Lys

```
     305                  310                  315                  320
Cys Tyr His Lys Lys Phe Arg Ser Pro Ala Arg Asp Val Ile Phe Arg
                325                  330                  335
Val Gln Phe His Thr Cys Ala Ile His Ala Trp Gly Val Val Phe Gly
                340                  345                  350
Lys Glu Asp Leu Asp Asp Ala Phe Lys Asp Asp Arg Phe Pro Glu Tyr
                355                  360                  365
Gly Lys Val Glu Phe Val Phe Ser Tyr Gly Pro Glu Lys Ile Gln Gly
           370                  375                  380
Met Glu His Leu Glu Asn Gly Pro Ser Val Ser Val Asp Tyr Asn Thr
385                  390                  395                  400
Ser Asp Pro Leu Ile Arg Trp Asp Ser Tyr Asp Asn Phe Ser Gly His
                405                  410                  415
Arg Asp Asp Gly Met Glu Glu Val Val Gly His Thr Gln Gly Pro Leu
                420                  425                  430
Asp Gly Ser Leu Tyr Ala Lys Val Lys Lys Lys Asp Ser Leu His Gly
                435                  440                  445
Ser Thr Gly Ala Val Asn Ala Thr Arg Pro Thr Leu Ser Ala Thr Pro
           450                  455                  460
Asn His Val Glu His Thr Leu Ser Val Ser Ser Asp Ser Gly Asn Ser
465                  470                  475                  480
Thr Ala Ser Thr Lys Thr Asp Lys Thr Asp Glu Pro Val Pro Gly Ala
                485                  490                  495
Ser Ser Ala His Ala Ala Arg Thr Val Thr Ile Leu Val Trp Gln Phe
                500                  505                  510
Ile Val Gln Asp Val Cys Leu Pro Leu Arg Cys
           515                  520
```

<210> 4131
<211> 608
<212> DNA
<213> Homo sapiens

<400> 4131
cggccggcgc gggcgcggcg ggccgggcag gggcgagggg cgccgggtct tgccccagaa
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gctgcgggca catccacgcc tgaaatgcgg cgctcagtcc tggtcaggaa cccaggccac
120
aaaggcctga gacccgttta tgaagagctc gactctgact ccgaggacct agaccccaat
180
cctgaagatc tggacccggt ttctgaagac ccagagcctg atcctgaaga cctcaacact
240
gtcccggaag acgtggaccc cagctatgaa gatctggagc cgtctcgga ggatctggac
300
cccgacgccg aagctccggg ctcggaaccc caagatcccg accccatgtc ttcgagtttc
360
gacctcgatc cagatgtgat tggccccgta cccctgattc tcgatcctaa cagcgacacc
420
ctcagccccg gcgatccaaa agtggacccc nnatctcctc tggcctcact gcgagccccc
480
aggtcttggc caccagcccc gcggtgctcc ccgccccccgc cagcccgccc cggcccttct
540
cctgcccgga ttgcggcgaa gccttccgcc gcagctccgg gctgagccag catcgccgca
600

cgcacagc
608

<210> 4132
<211> 194
<212> PRT
<213> Homo sapiens

<400> 4132
Arg Pro Ala Arg Ala Arg Arg Ala Gly Gln Gly Arg Gly Ala Pro Gly
 1   5   10   15
Leu Ala Pro Glu Ala Ala Gly Thr Ser Thr Pro Glu Met Arg Arg Ser
                20   25   30
Val Leu Val Arg Asn Pro Gly His Lys Gly Leu Arg Pro Val Tyr Glu
            35   40   45
Glu Leu Asp Ser Asp Ser Glu Asp Leu Asp Pro Asn Pro Glu Asp Leu
    50   55   60
Asp Pro Val Ser Glu Asp Pro Glu Pro Asp Pro Glu Asp Leu Asn Thr
65   70   75   80
Val Pro Glu Asp Val Asp Pro Ser Tyr Glu Asp Leu Glu Pro Val Ser
                85   90   95
Glu Asp Leu Asp Pro Asp Ala Glu Ala Pro Gly Ser Glu Pro Gln Asp
                100   105   110
Pro Asp Pro Met Ser Ser Ser Phe Asp Leu Asp Pro Asp Val Ile Gly
            115   120   125
Pro Val Pro Leu Ile Leu Asp Pro Asn Ser Asp Thr Leu Ser Pro Gly
    130   135   140
Asp Pro Lys Val Asp Pro Xaa Ser Pro Leu Ala Ser Leu Arg Ala Pro
145   150   155   160
Arg Ser Trp Pro Pro Ala Pro Arg Cys Ser Pro Pro Pro Pro Ala Arg
                165   170   175
Pro Gly Pro Ser Pro Ala Arg Ile Ala Ala Lys Pro Ser Ala Ala Ala
                180   185   190
Pro Gly

<210> 4133
<211> 1646
<212> DNA
<213> Homo sapiens

<400> 4133
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attttgatgg caaaaatcac acagggaaga acaaaaatta tccatgacaa actaggagtg
120
gaaatgggct gggagacaca gaaatgggt gcccacagtt cctgggatcc ctcctggaat
180
cctgggtttc cctcctagga ccctgcaagg taccctacgt gcctcctgga accccccccc
240
accccggagg tcccaaggaa cccagtttga gaaccaaggc tttaggccaa ggacttcctt
300
gcacaagaag gtgcagatgt acagggatgg ttcagacagt ggcctcaacc tcaatggctt
360

catcctcctc ctccagcagg ctgtaggaag catggctctg gcaaggccgc tgcagggggt
420
gggccaacag tttcgccatg cagttgtgca actccagggc tggcccagcc agtgccacct
480
catacttgta gctggtaccc ttggtatcca ggctgcccat gaaggcaaac atatccttcc
540
aactcatctc ctcctccttc tcctcagtgc cattgtggat gtaaacaacg tcaaagaaga
600
aatatgggca ctggaacatt ttcttcatgg gctccgtcaa ggagaactgg ggctggcaag
660
gtggacggct gtagacaagg atggtgcgga ccacatatgg cgggggaatc gtctgcacgt
720
tctctgtgac cggaagctca gtttctgct ggatgaggct gaaaagtcct tccagattga
780
aggtggaaca ggaggccgtc tccagatcat agaggcagct acagagctcg cggggggtcgg
840
aggtcaggcc agacagccag gccgtgtcat cgttcaccac caccagtgca aactcgtggc
900
ttttgtcgat cttgtgtttt gtccgcacga acatctcaat catcttctgg gagacattga
960
gggcgttggt tttggagccg ttgaacgact ccagctttgg cagtgacatt tcctctgaca
1020
ggtccaggca gataatcact ttctctggac agttgaccct tggtgtccga atttggacct
1080
cagggctgg cggggggcacc tgccaggact tagggccggc tcctgaagtg ttgaggctcc
1140
catcatcagc actggcggcc tcaccctcac cctcgctgcg gctgcccacg ctggcctgtg
1200
cccctactgc ccggtcctca gccccttcag gattggagcg agtgcggggc cgaggctctg
1260
ccgagtgctc ctcttcctcc tcctcctctt cagtggggct gctgggctct gccacttcca
1320
tggctcctgt gtggcttcgg ctcaccgtag cctgaacctc cttctaaatc agccgccgac
1380
tcactaggaa gccgccatct ttacagccgg aagttgtacg gcgcagcccc gacgcctcct
1440
gggaaatgta gttcagcggg ctgcagaaca agcagagaca gaaactggtt gaggctagaa
1500
agaacttgga aactgatagg ctgaaactgg gttggggggtg gggtttggag tgagagctgc
1560
ctggagctgg gtgcggcggg acctggaatg tgattggcta cactggagca aagtatgaaa
1620
tgtgattgga ttaaaaaaat tagtga
1646

<210> 4134
<211> 329
<212> PRT
<213> Homo sapiens

<400> 4134
Met Glu Val Ala Glu Pro Ser Ser Pro Thr Glu Glu Glu Glu Glu Glu
 1   5   10   15
Glu Glu His Ser Ala Glu Pro Arg Pro Arg Thr Arg Ser Asn Pro Glu

```
              20                     25                     30
Gly Ala Glu Asp Arg Ala Val Gly Ala Gln Ala Ser Val Gly Ser Arg
          35                     40                     45
Ser Glu Gly Glu Gly Glu Ala Ala Ser Ala Asp Asp Gly Ser Leu Asn
    50                     55                     60
Thr Ser Gly Ala Gly Pro Lys Ser Trp Gln Val Pro Pro Pro Ala Pro
65                     70                     75                     80
Glu Val Gln Ile Arg Thr Pro Arg Val Asn Cys Pro Glu Lys Val Ile
                85                     90                     95
Ile Cys Leu Asp Leu Ser Glu Glu Met Ser Leu Pro Lys Leu Glu Ser
            100                    105                    110
Phe Asn Gly Ser Lys Thr Asn Ala Leu Asn Val Ser Gln Lys Met Ile
        115                    120                    125
Glu Met Phe Val Arg Thr Lys His Lys Ile Asp Lys Ser His Glu Phe
    130                    135                    140
Ala Leu Val Val Val Asn Asp Asp Thr Ala Trp Leu Ser Gly Leu Thr
145                    150                    155                    160
Ser Asp Pro Arg Glu Leu Cys Ser Cys Leu Tyr Asp Leu Glu Thr Ala
                165                    170                    175
Ser Cys Ser Thr Phe Asn Leu Glu Gly Leu Phe Ser Leu Ile Gln Gln
            180                    185                    190
Lys Thr Glu Leu Pro Val Thr Glu Asn Val Gln Thr Ile Pro Pro Pro
        195                    200                    205
Tyr Val Val Arg Thr Ile Leu Val Tyr Ser Arg Pro Pro Cys Gln Pro
    210                    215                    220
Gln Phe Ser Leu Thr Glu Pro Met Lys Lys Met Phe Gln Cys Pro Tyr
225                    230                    235                    240
Phe Phe Phe Asp Val Val Tyr Ile His Asn Gly Thr Glu Glu Lys Glu
                245                    250                    255
Glu Glu Met Ser Trp Lys Asp Met Phe Ala Phe Met Gly Ser Leu Asp
            260                    265                    270
Thr Lys Gly Thr Ser Tyr Lys Tyr Glu Val Ala Leu Ala Gly Pro Ala
        275                    280                    285
Leu Glu Leu His Asn Cys Met Ala Lys Leu Leu Ala His Pro Leu Gln
    290                    295                    300
Arg Pro Cys Gln Ser His Ala Ser Tyr Ser Leu Leu Glu Glu Glu Asp
305                    310                    315                    320
Glu Ala Ile Glu Val Glu Ala Thr Val
                325
```

```
<210> 4135
<211> 388
<212> DNA
<213> Homo sapiens

<400> 4135
acgcgtggtg gccctggaca tgtacctcac tcagcaacgc atctccgacc cagtgatgga
60
gggtctgcga tcagccgtac gctatgacaa aacctatttc gacaagatcg tggccagcct
120
tctgccattg ctggaaaaac tgaccacagg ccggattgca gagctgctat ctcccgacta
180
catggatctt gaggacccac gaccaatctt tgactggatg cagatcatcc gcaaacgggc
240
```

agtggtctat gtcggcctgg acgctttatc tgatacagag gtagctgcag cggtgggcaa
300
ctcgatgttc agcgacctgg tgtcagttgc gggtcacatc tataagtttg gcatcgatga
360
tggcttgccc ggggccaccg gcggcaag
388

<210> 4136
<211> 123
<212> PRT
<213> Homo sapiens

<400> 4136
Met Tyr Leu Thr Gln Gln Arg Ile Ser Asp Pro Val Met Glu Gly Leu
 1   5   10   15
Arg Ser Ala Val Arg Tyr Asp Lys Thr Tyr Phe Asp Lys Ile Val Ala
            20   25   30
Ser Leu Leu Pro Leu Leu Glu Lys Leu Thr Thr Gly Arg Ile Ala Glu
        35   40   45
Leu Leu Ser Pro Asp Tyr Met Asp Leu Glu Asp Pro Arg Pro Ile Phe
    50   55   60
Asp Trp Met Gln Ile Ile Arg Lys Arg Ala Val Val Tyr Val Gly Leu
65   70   75   80
Asp Ala Leu Ser Asp Thr Glu Val Ala Ala Ala Val Gly Asn Ser Met
                85   90   95
Phe Ser Asp Leu Val Ser Val Ala Gly His Ile Tyr Lys Phe Gly Ile
            100   105   110
Asp Asp Gly Leu Pro Gly Ala Thr Gly Gly Lys
            115   120

<210> 4137
<211> 2255
<212> DNA
<213> Homo sapiens

<400> 4137
cggacctccc gcgcgccccg cacccgaccg gctcagccgc cggcagcgta acacgcccta
60
cgctcgcttg ctcgccggcc tcagggcagg caggcgggcg cgggagaccc cgccggggcc
120
gagacttggg gcgggcgacg aggaccaggt tacggcctcc tcgccatgtc ctcggcctgc
180
gacgcgggcg accactaccc cctgcacctc ctagtctgga aaaacgacta ccggcagctc
240
gagaaggagc tgcagggcca gaatgtggag gctgtggacc cacgaggtcg aacattattg
300
catcttgctg tttccttggg acatttggaa tctgctcgag tcttactccg acataaagca
360
gatgtgacaa agaaaatcg ccagggatgg acagttttac atgaggctgt gagcactggc
420
gatcctgaga tggtgtacac agttctccaa catcgagact accacaacac atccatggcc
480
cttgagggag ttcctgagct gctccaaaaa attctcgagg ctccggattt ctatgtgcag
540

```
atgaaatggg aattcaccag ctgggtgccc ttggtttcta gaatatgccc aaatgatgtc
600
tgtcgcatct ggaaaagtgg tgccaaactg cgcgtcgata tcacattgct gggatttgaa
660
aacatgagct ggataagagg gaggcgtagt tttatattta agggagaaga caactgggcg
720
gagttaatgg aagtcaacca tgatgacaaa gtggtcacca ccgaacgctt cgacctttcc
780
caagaaatgg agcgcctcac tctggacttg atgaagccaa aaagcaggga agttgagcgg
840
cggctcacaa gccctgtcat taacaccagc ctcgatacta aaaatattgc ttttgaaaga
900
actaaatccg gattctgggg ctggaggaca gataaagcag aagttgttaa tggttacgaa
960
gcaaaggttt acacagtaaa caatgtgaat gtgatcacca aaatacgcac agaacatctg
1020
accgaggagg aaaaaaagag atataaagca gacaggaacc cgctggaatc tttgctggga
1080
actgtggaac accaatttgg tgcacaaggg gacctcacca cggaatgtgc tactgcaaac
1140
aaccccacag ccatcacgcc tgatgagtac ttcaatgaag agtttgatct gnaaagacag
1200
ggacattggn aaggccgaaa gagctgacga ttagaacaca gaagtttaaa gcaatgttgt
1260
ggatgtgtga agagtttccc ctctctctgg tggagcaggt cattcccatc attgacctaa
1320
tggctcgaac gagtgctcat tttgcaagac tgagagattt catcaaattg gaattcccac
1380
ctggatttcc tgtcaaaata gaaattccct tgtttcatgt cttaaatgca cggattacat
1440
ttggaaatgt taatggctgt agcactgccg aagaatctgt atctcaaaat gtggaaggga
1500
cccaggctga ttcagcttcc cacatcacaa actttgaggt tgatcaatct gtgtttgaaa
1560
ttcccgaatc ttactatgtt caagacaatg cagaaatgt gcatttgcaa gatgaagatt
1620
acgagataat gcagtttgcc atccagcaaa gtctgctgga gtccagcagg agccaggaac
1680
tttcaggacc agcttcgaat ggagggatca gccagacaaa cacctatgac gcccagtatg
1740
agagggccat ccaggagagc ctcctcacca gcacagaagg cctgtgcccc agcgccctga
1800
gcgagacaag ccgttttgat aatgacttgc agctagccat ggagctctct gccaaagagc
1860
tggaggaatg ggagctccgg ctccaggagg aagaggctga gctccagcaa gtcttacagc
1920
tgtcactcac tgacaaatag acctttcagc ctgtgagcct ctgcacaaag cagaggctgt
1980
gggctgtcac agatgctgtg tcaaccaggg ccctagggct aagggcctgc accttgcgtg
2040
catgcagcag gcaacaactg ccccttcttt atgcagaggt gcagaaccag ggactcctgg
2100
gcccatccag gctgctccct ggggtggaga agggaccagg gattgcaggc cccatctcca
2160
```

```
ggctaagggg aggagagcat catcactttc cattagctgt attggcttgc aggtcacatt
2220
tttactgcca gcattagaca aaaccccaat ccccg
2255
```

```
<210> 4138
<211> 353
<212> PRT
<213> Homo sapiens
```

```
<400> 4138
Met Ser Ser Ala Cys Asp Ala Gly Asp His Tyr Pro Leu His Leu Leu
 1               5                  10                  15
Val Trp Lys Asn Asp Tyr Arg Gln Leu Glu Lys Glu Leu Gln Gly Gln
            20                  25                  30
Asn Val Glu Ala Val Asp Pro Arg Gly Arg Thr Leu Leu His Leu Ala
            35                  40                  45
Val Ser Leu Gly His Leu Glu Ser Ala Arg Val Leu Leu Arg His Lys
        50                  55                  60
Ala Asp Val Thr Lys Glu Asn Arg Gln Gly Trp Thr Val Leu His Glu
65                  70                  75                  80
Ala Val Ser Thr Gly Asp Pro Glu Met Val Tyr Thr Val Leu Gln His
                85                  90                  95
Arg Asp Tyr His Asn Thr Ser Met Ala Leu Glu Gly Val Pro Glu Leu
            100                 105                 110
Leu Gln Lys Ile Leu Glu Ala Pro Asp Phe Tyr Val Gln Met Lys Trp
            115                 120                 125
Glu Phe Thr Ser Trp Val Pro Leu Val Ser Arg Ile Cys Pro Asn Asp
        130                 135                 140
Val Cys Arg Ile Trp Lys Ser Gly Ala Lys Leu Arg Val Asp Ile Thr
145                 150                 155                 160
Leu Leu Gly Phe Glu Asn Met Ser Trp Ile Arg Gly Arg Arg Ser Phe
                165                 170                 175
Ile Phe Lys Gly Glu Asp Asn Trp Ala Glu Leu Met Glu Val Asn His
            180                 185                 190
Asp Asp Lys Val Val Thr Thr Glu Arg Phe Asp Leu Ser Gln Glu Met
            195                 200                 205
Glu Arg Leu Thr Leu Asp Leu Met Lys Pro Lys Ser Arg Glu Val Glu
        210                 215                 220
Arg Arg Leu Thr Ser Pro Val Ile Asn Thr Ser Leu Asp Thr Lys Asn
225                 230                 235                 240
Ile Ala Phe Glu Arg Thr Lys Ser Gly Phe Trp Gly Trp Arg Thr Asp
                245                 250                 255
Lys Ala Glu Val Val Asn Gly Tyr Glu Ala Lys Val Tyr Thr Val Asn
            260                 265                 270
Asn Val Asn Val Ile Thr Lys Ile Arg Thr Glu His Leu Thr Glu Glu
            275                 280                 285
Glu Lys Lys Arg Tyr Lys Ala Asp Arg Asn Pro Leu Glu Ser Leu Leu
        290                 295                 300
Gly Thr Val Glu His Gln Phe Gly Ala Gln Gly Asp Leu Thr Thr Glu
305                 310                 315                 320
Cys Ala Thr Ala Asn Asn Pro Thr Ala Ile Thr Pro Asp Glu Tyr Phe
                325                 330                 335
Asn Glu Glu Phe Asp Leu Xaa Arg Gln Gly His Trp Xaa Gly Arg Lys
```

```
                340                    345                    350
Ser


<210> 4139
<211> 431
<212> DNA
<213> Homo sapiens


<400> 4139
acgcgtgtcc cccgcccctc gcagaggact gtctcccgct cagggcctct ctgcctcccc
60
gagtccaggg ccctcctgag cgccagcccg gaggtggttg tcgcagtggg attccctggg
120
ggtaagtgtc ctgttcctgt gcgcgtgccc tgagccccgc ctgggtccta ggccacccac
180
cgacactgcc ccccacacag ccgggaagtc cacctttctc aagaagcacc tcgtgtcggc
240
cggatatgtc cacgtgaaca gggtatgacc aggcttttgc cgccccaaat ctattataaa
300
gttcccatct ccacctctca actggtttgg ggcggctttc ctccatcatt gcctccccgt
360
ccccgctcgg ggtctctctc cccctggggt ctgccgatct gtttgtgacc tctcgtgtcc
420
ccaggacacg c
431


<210> 4140
<211> 50
<212> PRT
<213> Homo sapiens


<400> 4140
Thr Arg Val Pro Arg Pro Ser Gln Arg Thr Val Ser Arg Ser Gly Pro
  1               5                  10                  15
Leu Cys Leu Pro Glu Ser Arg Ala Leu Leu Ser Ala Ser Pro Glu Val
              20                  25                  30
Val Val Ala Val Gly Phe Pro Gly Gly Lys Cys Pro Val Pro Val Arg
          35                  40                  45
Val Pro
    50


<210> 4141
<211> 1182
<212> DNA
<213> Homo sapiens


<400> 4141
nnaccagctc cgcgcctcgg cctctccgcc ccctccccag cctttctctc gccctcttct
60
cccacactcc cggccggcgc ctcggctttg tgcgaggaga tggtgtagcc ccctggccgc
120
cgaaggagga gccggacact tgtctcccgt ctccgagctg ctccccaccc ctggaggaga
180
```

```
gaccccccc  tcggctcggc  gccttctgcg  tctcccggct  ggtggggaag  cctctgcgcc
240
gccggcacca  tgagtgaaca  gagtatctgt  caggcaagag  ctgctgtgat  ggtttatgat
300
gatgccaata  agaagtgggt  gccagctggt  ggctcaactg  gattcagcag  agttcatatc
360
tatcaccata  caggcaacaa  cacattcaga  gtggtgggca  ggaagattca  ggaccatcag
420
gtcgtgataa  actgtgccat  tcctaaaggg  ttgaagtaca  atcaagctac  acagaccttc
480
caccagtggc  gagatgctag  acaggtgtat  ggtctcaact  ttggcagcaa  agaggatgcc
540
aatgtcttcg  caagtgccat  gatgcatgcc  ttagaagtgt  taaattcaca  ggaaacaggg
600
ccaacattgc  ctagacaaaa  ctcacaacta  cctgctcaag  ttcaaaatgg  cccatcccaa
660
gaagaattgg  aaattcaaag  aagacaacta  caagaacagc  aacggcaaaa  ggagctggag
720
cgggaaaggc  tggagcgaga  aagaatggaa  agagaaaggt  tggagagaga  gaggttagaa
780
agggaaaggc  tggagaggga  gcgactggaa  caagaacagc  tggagagaga  gagacaagaa
840
cgggaacggc  aggaacgcct  ggagcggcag  gaacgcctgg  agcggcagga  acgcctggag
900
cggcaggaac  gcctggatcg  ggagagggaa  agacaagaac  gagagaggct  ggagagactg
960
gaacgggaga  ggcaagaaag  ggagcgacaa  gagcagttag  aaagggaaca  gctggaatgg
1020
gagagagagc  gcagaatatc  aagtgctgct  gcccctgcct  ctgttgagac  tcctctaaac
1080
tctgtgctgg  gagactcttc  tgcttctgag  ccaggcttgc  aggcagcctc  tcagccggcc
1140
gagactccat  cccaacaggg  cattgtcttg  ggaccacttg  ca
1182


<210>  4142
<211>  311
<212>  PRT
<213>  Homo sapiens

<400>  4142
Met Ser Glu Gln Ser Ile Cys Gln Ala Arg Ala Ala Val Met Val Tyr
 1               5                  10                  15
Asp Asp Ala Asn Lys Lys Trp Val Pro Ala Gly Gly Ser Thr Gly Phe
            20                  25                  30
Ser Arg Val His Ile Tyr His His Thr Gly Asn Asn Thr Phe Arg Val
        35                  40                  45
Val Gly Arg Lys Ile Gln Asp His Gln Val Val Ile Asn Cys Ala Ile
    50                  55                  60
Pro Lys Gly Leu Lys Tyr Asn Gln Ala Thr Gln Thr Phe His Gln Trp
65                  70                  75                  80
Arg Asp Ala Arg Gln Val Tyr Gly Leu Asn Phe Gly Ser Lys Glu Asp
                85                  90                  95
Ala Asn Val Phe Ala Ser Ala Met Met His Ala Leu Glu Val Leu Asn
```

```
            100                      105                     110
Ser Gln Glu Thr Gly Pro Thr Leu Pro Arg Gln Asn Ser Gln Leu Pro
            115                      120                     125
Ala Gln Val Gln Asn Gly Pro Ser Gln Glu Glu Leu Glu Ile Gln Arg
        130                     135                     140
Arg Gln Leu Gln Glu Gln Gln Arg Gln Lys Glu Leu Glu Arg Glu Arg
145                     150                     155                     160
Leu Glu Arg Glu Arg Met Glu Arg Glu Arg Leu Glu Arg Glu Arg Leu
                165                     170                     175
Glu Arg Glu Arg Leu Glu Arg Glu Arg Leu Glu Gln Glu Gln Leu Glu
                180                     185                     190
Arg Glu Arg Gln Glu Arg Glu Arg Gln Glu Arg Leu Glu Arg Gln Glu
            195                     200                     205
Arg Leu Glu Arg Gln Glu Arg Leu Glu Arg Gln Glu Arg Leu Asp Arg
        210                     215                     220
Glu Arg Glu Arg Gln Glu Arg Glu Arg Leu Glu Arg Leu Glu Arg Glu
225                     230                     235                     240
Arg Gln Glu Arg Glu Arg Gln Glu Gln Leu Glu Arg Glu Gln Leu Glu
                245                     250                     255
Trp Glu Arg Glu Arg Arg Ile Ser Ser Ala Ala Ala Pro Ala Ser Val
                260                     265                     270
Glu Thr Pro Leu Asn Ser Val Leu Gly Asp Ser Ser Ala Ser Glu Pro
            275                     280                     285
Gly Leu Gln Ala Ala Ser Gln Pro Ala Glu Thr Pro Ser Gln Gln Gly
            290                     295                     300
Ile Val Leu Gly Pro Leu Ala
305                     310
```

<210> 4143
<211> 1773
<212> DNA
<213> Homo sapiens

<400> 4143
```
tttttgacag atcaaagtag agtcatagat tttatttaat taaaatagat taaaaacaga
60
ctgtgtaaaa gaattagaat tctcaataat ttactattat ttacattagc aaatgtcggt
120
cgttagtaga cactgagcag agaagcttga agaacgggga tcctctcctg tgggcagggg
180
agccccagct tccctcgtga ttcccgtcct ttcaagttca ttatggcagc tctgtcaatg
240
agcaccccag ggtggtgtgg ccgcagcacc aggacccgcg ctgaaggccc agagacctgg
300
caggccggga agaaattcct ttcctttggg aagaaccacc aacgctcagt ccaagctcac
360
acggttatct agtcggcaat gccttccctg ccctgcagcc aatacccccc actgtgctgg
420
gccttctgca atactcctg gggttgaccc aaacccagtt ccagataaa agataaaaag
480
aaaaaaaaaa aggccacata tcccagttct cagagaaatc ctggattact aaacatcccc
540
tgcctgtggc acctggaatg ggtgacttgt caaatctcc ctcaagacgt tttgtgcgtt
600
```
```
3328
```

```
tgccgtggga gggaatggtg gggagtcagg gtggctgggg ggcactaggc cacttcacca
660
agagggatgc acctcccagg aagcagtagc agtgagagcg agccccacag gaactgtccc
720
tgccctggca gtgcgcaccc tgtgggcacc aagcagggag tgaagaccct cagaacacag
780
ccctgtctcc ggctgtgacc tcagcttgct ggagactctg cggtcagcct ggcccactag
840
gagcccctgc tgctccactt gcaggacacc caggcctcct ggcgtcagtg gggcctggga
900
cgtctgggag ttccagagct gggtcagcag ctgtgaccat gggggccagc acagtggaca
960
gcatcagagc tggcagtgaa cagctgaggc gggggaggcc tgatagagag gttcagtccc
1020
aaatgtctgt ctcgaagggg accaggtggt aatatgacag gttggtgacg taggctgctg
1080
ggtcgtcccc gtcctccagc tctgagggaa actcactgcc attctcaaat aaatgctctg
1140
ttgggtccac gcccagctgc tggtctcttc catttggtat actgtggtca ataactattg
1200
tttcggtatt tgctaaacaa aatccattgg acctcatgat ttctgatatt ttgactggac
1260
tttgaaagct gggttgaatt ttatgcacat tatcattttt taacacctga tccagaggag
1320
atctttcgaa gaaggtgagc acaacttccg atctagaata tttacagggc atgcttatga
1380
tcgtcttcag cagcttctcc acctcattaa gcctggtctc tatgtcgtgg gcttccttta
1440
tggcaaccag tccttgccgc agcggcccct gcgccagttc ggaccggtcc tcgggaaagg
1500
cgtcgcgcag gcgctgccac aggcggccca ggtccgccag gctgcggtgc aggtagagca
1560
cgctgcggtc cgaccactcc gtgcggatct cgaagaactc ctcttcgtcg ccgcgccggc
1620
tgacgatgag cctgcggatg ccgttcaccc agcagccgcg cacgaacatg ttcacgagcg
1680
acgtgccctc aaacaccgcc gaggccatgt cgcacgcatg cccccgccaa gggctcccca
1740
gccccgccgc cgcccgccc gcaggaggcg cgc
1773
```

```
<210> 4144
<211> 231
<212> PRT
<213> Homo sapiens
```

```
<400> 4144
Met Ala Ser Ala Val Phe Glu Gly Thr Ser Leu Val Asn Met Phe Val
 1               5                  10                  15
Arg Gly Cys Trp Val Asn Gly Ile Arg Arg Leu Ile Val Ser Arg Arg
            20                  25                  30
Gly Asp Glu Glu Glu Phe Phe Glu Ile Arg Thr Glu Trp Ser Asp Arg
         35                  40                  45
Ser Val Leu Tyr Leu His Arg Ser Leu Ala Asp Leu Gly Arg Leu Trp
```

```
        50                      55                      60
Gln Arg Leu Arg Asp Ala Phe Pro Glu Asp Arg Ser Glu Leu Ala Gln
65                      70                      75                      80
Gly Pro Leu Arg Gln Gly Leu Val Ala Ile Lys Glu Ala His Asp Ile
                    85                      90                      95
Glu Thr Arg Leu Asn Glu Val Glu Lys Leu Leu Lys Thr Ile Ile Ser
                    100                     105                     110
Met Pro Cys Lys Tyr Ser Arg Ser Glu Val Val Leu Thr Phe Phe Glu
            115                     120                     125
Arg Ser Pro Leu Asp Gln Val Leu Lys Asn Asp Asn Val His Lys Ile
            130                     135                     140
Gln Pro Ser Phe Gln Ser Pro Val Lys Ile Ser Glu Ile Met Arg Ser
145                     150                     155                     160
Asn Gly Phe Cys Leu Ala Asn Thr Glu Thr Ile Val Ile Asp His Ser
                    165                     170                     175
Ile Pro Asn Gly Arg Asp Gln Gln Leu Gly Val Asp Pro Thr Glu His
                    180                     185                     190
Leu Phe Glu Asn Gly Ser Glu Phe Pro Ser Glu Leu Glu Asp Gly Asp
                    195                     200                     205
Asp Pro Ala Ala Tyr Val Thr Asn Leu Ser Tyr Tyr His Leu Val Pro
            210                     215                     220
Phe Glu Thr Asp Ile Trp Asp
225                     230
```

```
<210> 4145
<211> 400
<212> DNA
<213> Homo sapiens
```

```
<400> 4145
nnaacccttg agatgctggc tggagaccct ctactctcag aagacccaga acctgacaag
60
acccctgcag ccactgttac caacgaagcc agctgttgga gcggcccctc cccagagggt
120
cctgtacccc tcacagggga ggaactggac ttgcggctca ttcggacaaa gggggggtgtg
180
gacgcagccc tggaatatgc caagacctgg agccgctatg ccaaggaact gcttgcctgg
240
actgaaaaga gagccagcta tgagctggag tttgctaaga gcaccatgaa gatcgctgaa
300
gctggcaagg tgtccattca acagcagagc cacatgcctc tgcagtacat ctacaccctg
360
tttctggagc acgatctcag cctgggaacc ctggccatgg
400
```

```
<210> 4146
<211> 133
<212> PRT
<213> Homo sapiens
```

```
<400> 4146
Xaa Thr Leu Glu Met Leu Ala Gly Asp Pro Leu Leu Ser Glu Asp Pro
 1               5                      10                      15
Glu Pro Asp Lys Thr Pro Ala Ala Thr Val Thr Asn Glu Ala Ser Cys
```

```
                20                    25                    30
Trp Ser Gly Pro Ser Pro Glu Gly Pro Val Pro Leu Thr Gly Glu Glu
        35                    40                    45
Leu Asp Leu Arg Leu Ile Arg Thr Lys Gly Gly Val Asp Ala Ala Leu
    50                    55                    60
Glu Tyr Ala Lys Thr Trp Ser Arg Tyr Ala Lys Glu Leu Leu Ala Trp
65                    70                    75                    80
Thr Glu Lys Arg Ala Ser Tyr Glu Leu Glu Phe Ala Lys Ser Thr Met
                85                    90                    95
Lys Ile Ala Glu Ala Gly Lys Val Ser Ile Gln Gln Gln Ser His Met
                100                   105                   110
Pro Leu Gln Tyr Ile Tyr Thr Leu Phe Leu Glu His Asp Leu Ser Leu
        115                   120                   125
Gly Thr Leu Ala Met
    130
```

```
<210> 4147
<211> 4892
<212> DNA
<213> Homo sapiens
```

```
<400> 4147
nnaaatgtag agaagcagcc gataaaatag cattgcctga agaagtttgg aggctgagag
60
cagcagtaga ctggccaact gcagagcaag ttgtttctcc agccgtgcgg tgcagcctca
120
tgcccccaac ccagcttagc cactgtaaga agacgttcac tgtacagacg accaaacttg
180
ccgtggaaga gacagttgtg agattccctt gcaaatttac atacgagaat ggcttgtgaa
240
atcatgcctc tgcaaagttc acaggaagat gaaagacctc tgtcaccttt ctatttgagt
300
gctcatgtac cccaagtcag caatgtgtct gcaaccggag aactcttaga aagaaccatc
360
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960
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2580
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2760
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4080
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4140
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4200
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attgtgtttt tttaaaaata catgtctagt ctgtccttta atagctctct taaataagct
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4680
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4892

<210> 4148
<211> 697
<212> PRT
<213> Homo sapiens

<400> 4148
Met Ala Cys Glu Ile Met Pro Leu Gln Ser Ser Gln Glu Asp Glu Arg
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Pro Leu Ser Pro Phe Tyr Leu Ser Ala His Val Pro Gln Val Ser Asn
            20   25   30
Val Ser Ala Thr Gly Glu Leu Leu Glu Arg Thr Ile Arg Ser Ala Val
        35   40   45
Glu Gln His Leu Phe Asp Val Asn Asn Ser Gly Gly Gln Ser Ser Glu
    50   55   60
Asp Ser Glu Ser Gly Thr Leu Ser Ala Ser Ser Ala Thr Ser Ala Arg
65   70   75   80
Gln Arg Arg Arg Gln Ser Lys Glu Gln Asp Glu Val Arg His Gly Arg
                85   90   95
Asp Lys Gly Leu Ile Asn Lys Glu Asn Thr Pro Ser Gly Phe Asn His
            100   105   110
Leu Asp Asp Cys Ile Leu Asn Thr Gln Glu Val Glu Lys Val His Lys
        115   120   125
Asn Thr Phe Gly Cys Ala Gly Glu Arg Ser Lys Pro Lys Arg Gln Lys
    130   135   140
Ser Ser Thr Lys Leu Ser Glu Leu His Asp Asn Gln Asp Gly Leu Val
145   150   155   160
Asn Met Glu Ser Leu Asn Ser Thr Arg Ser His Glu Arg Thr Gly Pro
                165   170   175
Asp Asp Phe Glu Trp Met Ser Asp Glu Arg Lys Gly Asn Glu Lys Asp

3334

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                     180                      185                      190
Gly Gly His Thr Gln His Phe Glu Ser Pro Thr Met Lys Ile Gln Glu
            195                      200                      205
His Pro Ser Leu Ser Asp Thr Lys Gln Gln Arg Asn Gln Asp Ala Gly
        210                      215                      220
Asp Gln Glu Glu Ser Phe Val Ser Glu Val Pro Gln Ser Asp Leu Thr
225                      230                      235                      240
Ala Leu Cys Asp Glu Lys Asn Trp Glu Glu Pro Ile Pro Ala Phe Ser
                245                      250                      255
Ser Trp Gln Arg Glu Asn Ser Asp Ser Asp Glu Ala His Leu Ser Pro
                260                      265                      270
Gln Ala Gly Arg Leu Ile Arg Gln Leu Leu Asp Glu Asp Ser Asp Pro
        275                      280                      285
Met Leu Ser Pro Arg Phe Tyr Ala Tyr Gly Gln Ser Arg Gln Tyr Leu
    290                      295                      300
Asp Asp Thr Glu Val Pro Pro Ser Pro Pro Asn Ser His Ser Phe Met
305                      310                      315                      320
Arg Arg Arg Ser Ser Ser Leu Gly Ser Tyr Asp Asp Glu Gln Glu Asp
                325                      330                      335
Leu Thr Pro Ala Gln Leu Thr Arg Arg Ile Gln Ser Leu Lys Lys Lys
            340                      345                      350
Ile Arg Lys Phe Glu Asp Arg Phe Glu Glu Glu Lys Lys Tyr Arg Pro
        355                      360                      365
Ser His Ser Asp Lys Ala Ala Asn Pro Glu Val Leu Lys Trp Thr Asn
    370                      375                      380
Asp Leu Ala Lys Phe Arg Arg Gln Leu Lys Glu Ser Lys Leu Lys Ile
385                      390                      395                      400
Ser Glu Glu Asp Leu Thr Pro Arg Met Arg Gln Arg Ser Asn Thr Leu
                405                      410                      415
Pro Lys Ser Phe Gly Ser Gln Leu Glu Lys Glu Asp Glu Lys Lys Gln
            420                      425                      430
Glu Leu Val Asp Lys Ala Ile Lys Pro Ser Val Glu Ala Thr Leu Glu
        435                      440                      445
Ser Ile Gln Arg Lys Leu Gln Glu Lys Arg Ala Glu Ser Ser Arg Pro
    450                      455                      460
Glu Asp Ile Lys Asp Met Thr Lys Asp Gln Ile Ala Asn Glu Lys Val
465                      470                      475                      480
Ala Leu Gln Lys Ala Leu Leu Tyr Tyr Glu Ser Ile His Gly Arg Pro
                485                      490                      495
Val Thr Lys Asn Glu Arg Gln Val Met Lys Pro Leu Tyr Asp Arg Tyr
            500                      505                      510
Arg Leu Val Lys Gln Ile Leu Ser Arg Ala Asn Thr Ile Pro Ile Ile
        515                      520                      525
Gly Ser Pro Ser Ser Lys Arg Arg Ser Pro Leu Leu Gln Pro Ile Ile
        530                      535                      540
Glu Gly Glu Thr Ala Ser Phe Phe Lys Glu Ile Lys Glu Glu Glu Glu
545                      550                      555                      560
Gly Ser Glu Asp Asp Ser Asn Val Lys Pro Asp Phe Met Val Thr Leu
                565                      570                      575
Lys Thr Asp Phe Ser Ala Arg Cys Phe Leu Asp Gln Phe Glu Asp Asp
            580                      585                      590
Ala Asp Gly Phe Ile Ser Pro Met Asp Asp Lys Ile Pro Ser Lys Cys
        595                      600                      605
Ser Gln Asp Thr Gly Leu Ser Asn Leu His Ala Ala Ser Ile Pro Glu
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          610                    615                    620
Leu Leu Glu His Leu Gln Glu Met Arg Glu Glu Lys Lys Arg Ile Arg
625                         630                    635                    640
Lys Lys Leu Arg Asp Phe Glu Asp Asn Phe Phe Arg Gln Asn Gly Arg
                   645                         650                    655
Asn Val Gln Lys Glu Asp Arg Thr Pro Met Ala Glu Glu Tyr Ser Glu
                   660                         665                    670
Tyr Lys His Ile Lys Ala Lys Leu Arg Leu Leu Glu Val Leu Ile Ser
              675                         680                    685
Lys Arg Asp Thr Asp Ser Lys Ser Met
         690                    695
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<210> 4149
<211> 1396
<212> DNA
<213> Homo sapiens

<400> 4149
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120
gatccggagg ccaggagctc aaccaccctt cttcggaaca gggccggcct gctgctgtgc
180
cctcgacgct cggtgcctgt atctactccg gggcctaggt cggctccggg ggcggcttag
240
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420
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600
aaacccttca tctgcaccat gcccatgcgg ctggatgacg gctggaacca gattcagttc
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720
cagatccatg caaattgtcg catccgacgg gtttacttct cagacagact ctactcagaa
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960
tatacttggt gttgcttgtc atggacaccg gtgaacatgc cgtaactctg tgactgcatt
1020
gtaagtgcag tggggtaag cagtcctgtg agtggcgcat gaacgctgga gcttattccg
1080
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ccgcctgccc cagtgtgggg ggagatacct ttaccatgaa cttacagaat taaagatggc
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ccataaggaa ttccagacca atatttcttc ctgcggttta ttctatgttt tatatattat
1200
ctaaatatat gtatatgctg tgtcatactc ataatctgga aatgaataaa gtgatatatt
1260
cctggtttgt aaaaaaaaaa aaaaaatttg ctataaaatg agaagtctca ctgatagagg
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1380
atttggaaaa aaaaaa
1396

<210> 4150
<211> 193
<212> PRT
<213> Homo sapiens

<400> 4150
Met Phe Lys Asn Thr Phe Gln Ser Gly Phe Leu Ser Ile Leu Tyr Ser
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Ile Gly Ser Lys Pro Leu Gln Ile Trp Asp Lys Lys Val Arg Asn Gly
            20   25   30
His Ile Lys Arg Ile Thr Asp Asn Asp Ile Gln Ser Leu Val Leu Glu
        35   40   45
Ile Glu Gly Thr Asn Val Ser Thr Thr Tyr Ile Thr Cys Pro Ala Asp
    50   55   60
Pro Lys Lys Thr Leu Gly Ile Lys Leu Pro Phe Leu Val Met Ile Ile
65   70   75   80
Lys Asn Leu Lys Lys Tyr Phe Thr Phe Glu Val Gln Val Leu Asp Asp
                85   90   95
Lys Asn Val Arg Arg Arg Phe Arg Ala Ser Asn Tyr Gln Ser Thr Thr
                100   105   110
Arg Val Lys Pro Phe Ile Cys Thr Met Pro Met Arg Leu Asp Asp Gly
            115   120   125
Trp Asn Gln Ile Gln Phe Asn Leu Leu Asp Phe Thr Arg Arg Ala Tyr
            130   135   140
Gly Thr Asn Tyr Ile Glu Thr Leu Arg Val Gln Ile His Ala Asn Cys
145   150   155   160
Arg Ile Arg Arg Val Tyr Phe Ser Asp Arg Leu Tyr Ser Glu Asp Glu
                165   170   175
Leu Pro Ala Glu Phe Lys Leu Tyr Leu Pro Val Gln Asn Lys Ala Lys
            180   185   190
Gln

<210> 4151
<211> 1372
<212> DNA
<213> Homo sapiens

<400> 4151
ttatattttt tttttttttt tttttttttt cacggacaga cagggtcgtt tgtcacagca
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3337

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cgcgagcacc ctccccagat gaaaacacca gcaccaggag gtgggccgta gcccaggctg
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240
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480
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tgccctgcac tgcctcctgg cctcaggggc tgctgcggtg gtgggaaggc tgcccagcag
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720
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1140
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1200
tgcgccctgc aaatgtcggc cagagaggag ctttccactt gaatctccac ggcctggatg
1260
gcgctgctgg cacaggtcg gtcatggcca cctctcggac gatgaggtga acgttggcgc
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1372

<210> 4152
<211> 97
<212> PRT
<213> Homo sapiens

<400> 4152
Met Pro Cys Thr Ala Ser Trp Pro Gln Gly Leu Leu Arg Trp Trp Glu
 1   5   10   15
Gly Cys Pro Ala Val Arg Lys Ala Ser Ala Gly Ala Ala Ala Ala Val

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                  20                      25                      30
Arg Glu Gly Glu Thr Pro Ala Glu Asp Ala Lys Leu Asp Arg Pro Gly
          35                      40                      45
Ser Glu Pro Ala Ser Val Ala Pro Asn Gln Asn Leu Leu Cys Ala Pro
          50                      55                      60
Arg Pro Pro Ser Thr Phe Met Ser Val Leu Leu Leu Arg Gly Gln Val
65                      70                      75                      80
Leu Pro Ser Leu Thr Ala Leu Ala Arg Pro Ala Arg Phe Pro Ser Asn
                    85                      90                      95
Pro
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<210> 4153
<211> 395
<212> DNA
<213> Homo sapiens

<400> 4153
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aaatcctccg attggcaaga aaggctttga tttcctcttt tatcacactg ctgtccctcc
120
tcattaattc ttccacttta tcatttacat ctaggtcctc ttctgaggct tcaaaactgt
180
atgacctctg acccatgctg tttgcatgga agcgagttgg tgacatcttt ccattggatg
240
tagataatcg ctcattattc tccctcccat tttgattggt agtgcaaggc tgtggggaag
300
tatcataact gttgctaggt gacggggaca ttcccgaatg ctgcgtctgt gtggaagctg
360
tagctgtaga ggaagatgct gggacattgt tagtn
395
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```
<210> 4154
<211> 110
<212> PRT
<213> Homo sapiens

<400> 4154
Met Ser Pro Ser Pro Ser Asn Ser Tyr Asp Thr Ser Pro Gln Pro Cys
1               5                      10                      15
Thr Thr Asn Gln Asn Gly Arg Glu Asn Asn Glu Arg Leu Ser Thr Ser
                    20                      25                      30
Asn Gly Lys Met Ser Pro Thr Arg Phe His Ala Asn Ser Met Gly Gln
          35                      40                      45
Arg Ser Tyr Ser Phe Glu Ala Ser Glu Glu Asp Leu Asp Val Asn Asp
          50                      55                      60
Lys Val Glu Glu Leu Met Arg Arg Asp Ser Ser Val Ile Lys Glu Glu
65                      70                      75                      80
Ile Lys Ala Phe Leu Ala Asn Arg Arg Ile Ser Gln Ala Val Asp Thr
                    85                      90                      95
Ile Gly Lys Met Leu Phe Pro Ser Val His Ser Gly Leu Ile
              100                     105                     110
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3339

<210> 4155
<211> 1191
<212> DNA
<213> Homo sapiens

<400> 4155
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gggagacaaa ggggaccggt tcctctctag gcgccaagat gtggatacag gttcgcacca
120
ttgatggctc caagacgtgc accattgagg acgtgtctcg caaagccacg attgaggagc
180
tgcgcgagcg ggtgtgggcg ctgttcgacg tgcggcccga atgccagcgc ctcttctacc
240
ggggcaagca gttggaaaat ggatatacct tatttgatta tgatgttgga ctgaatgata
300
taattcagct gctagttcgc ccagaccctg atcatcttcc tggcacatct acacagattg
360
aggctaaacc ctgttctaat agtccaccta aagtaaagaa agctccgagg gtaggacctt
420
ccaatcagcc atctacatca gctcgtgccc gtcttattga tcctggcttt ggaatatata
480
agatacccag aaagcggtac tctagaaatg aatgtcaagg atcttagacc acgagctaga
540
accattttga aatggaatga actaaatgtt ggtgatgtgg taatggttaa ttataatgta
600
gaaagtcctg gacaaagagg attctggttt gatgcagaaa ttaccacatt gaagacaatc
660
tcaaggacca aaaagaact tcgtgtgaaa attttcctgg ggggttctga aggaacatta
720
aatgactgca agataatatc tgtagatgaa atcttcaaga ttgagagacc tggagcccat
780
cccctttcat ttgcagatgg aaagttttta aggcgaaatg accctgaatg tgacctgtgt
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960
aatccacctt tggataaagt cccagaagag gaatactggt attgtccttc ttgtaaaact
1020
gattccagtg aagttgtaaa ggctggtgaa agactcaaga tgagtaaaaa gaaagcaaag
1080
atgccgtcag ctagtactga aagccgaaga gactgaggca ggggagggga ggggagggaa
1140
tgaggcagct ctaggatcta tactgtagct aataaaatgt aaaaacacct g
1191

<210> 4156
<211> 233
<212> PRT
<213> Homo sapiens

<400> 4156
Asp Leu Pro Ile Ser His Leu His Gln Leu Val Pro Val Leu Leu Ile

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     1                5                    10                   15
Leu Ala Leu Glu Tyr Ile Arg Tyr Pro Glu Ser Gly Thr Leu Glu Met
           20                       25                   30
Asn Val Lys Asp Leu Arg Pro Arg Ala Arg Thr Ile Leu Lys Trp Asn
           35                       40                   45
Glu Leu Asn Val Gly Asp Val Val Met Val Asn Tyr Asn Val Glu Ser
       50                       55                       60
Pro Gly Gln Arg Gly Phe Trp Phe Asp Ala Glu Ile Thr Thr Leu Lys
65                       70                       75                       80
Thr Ile Ser Arg Thr Lys Lys Glu Leu Arg Val Lys Ile Phe Leu Gly
                   85                       90                       95
Gly Ser Glu Gly Thr Leu Asn Asp Cys Lys Ile Ile Ser Val Asp Glu
               100                      105                      110
Ile Phe Lys Ile Glu Arg Pro Gly Ala His Pro Leu Ser Phe Ala Asp
               115                      120                      125
Gly Lys Phe Leu Arg Arg Asn Asp Pro Glu Cys Asp Leu Cys Gly Gly
       130                      135                      140
Asp Pro Glu Lys Lys Cys His Ser Cys Ser Cys Arg Val Cys Gly Gly
145                      150                      155                      160
Lys His Glu Pro Asn Met Gln Leu Leu Cys Asp Glu Cys Asn Val Ala
                   165                      170                      175
Tyr His Ile Tyr Cys Leu Asn Pro Pro Leu Asp Lys Val Pro Glu Glu
               180                      185                      190
Glu Tyr Trp Tyr Cys Pro Ser Cys Lys Thr Asp Ser Ser Glu Val Val
       195                      200                      205
Lys Ala Gly Glu Arg Leu Lys Met Ser Lys Lys Lys Ala Lys Met Pro
       210                      215                      220
Ser Ala Ser Thr Glu Ser Arg Arg Asp
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<210> 4157
<211> 3460
<212> DNA
<213> Homo sapiens
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gaggatgagt ttgaggagac actccaggag gcttgcaggc acctgggcag atacagggtg
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540
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2040
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gagaagaccc ccagcagggg tactgggtac ccggcaggcc agtgccctca cagttgactt
2160

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2280
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2460
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2640
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2820
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3460


<210> 4158
<211> 463
<212> PRT
<213> Homo sapiens


<400> 4158
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 1               5                   10                  15
Thr Arg Arg Cys Met Leu Ile Leu Gly Ile Pro Glu Asp Cys Gly Glu
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                    20                    25                    30
Asp Glu Phe Glu Glu Thr Leu Gln Glu Ala Cys Arg His Leu Gly Arg
            35                    40                    45
Tyr Arg Val Ile Gly Arg Met Phe Arg Arg Glu Glu Asn Ala Gln Ala
    50                    55                    60
Ile Leu Leu Glu Leu Ala Gln Asp Ile Asp Tyr Ala Leu Leu Pro Arg
65                    70                    75                    80
Glu Ile Pro Gly Lys Gly Gly Pro Trp Glu Val Ile Val Lys Pro Arg
                85                    90                    95
Asn Ser Asp Gly Glu Phe Leu Asn Arg Leu Asn Arg Phe Leu Glu Glu
                100                   105                   110
Glu Arg Arg Thr Val Ser Asp Met Asn Arg Val Leu Gly Ser Asp Thr
                115                   120                   125
Asn Cys Ser Ala Pro Arg Val Thr Ile Ser Pro Glu Phe Trp Thr Trp
    130                   135                   140
Ala Gln Thr Leu Gly Ala Ala Val Gln Pro Leu Leu Glu Gln Met Leu
145                   150                   155                   160
Tyr Arg Glu Leu Arg Val Phe Ser Gly Asn Thr Ile Ser Ile Pro Gly
                165                   170                   175
Ala Leu Ala Phe Asp Ala Trp Leu Glu His Thr Thr Glu Met Leu Gln
                180                   185                   190
Met Trp Gln Val Pro Glu Gly Glu Lys Arg Arg Arg Leu Met Glu Cys
                195                   200                   205
Leu Arg Gly Pro Ala Leu Gln Val Val Ser Gly Leu Arg Ala Ser Asn
    210                   215                   220
Ala Ser Ile Thr Val Glu Glu Cys Leu Ala Ala Leu Gln Gln Val Phe
225                   230                   235                   240
Gly Pro Val Glu Ser His Lys Ile Ala Gln Val Lys Leu Cys Lys Ala
                245                   250                   255
Tyr Gln Glu Ala Gly Glu Lys Val Ser Ser Phe Val Leu Arg Leu Glu
                260                   265                   270
Pro Leu Leu Gln Arg Ala Val Glu Asn Asn Val Val Ser Arg Arg Asn
    275                   280                   285
Val Asn Gln Thr Arg Leu Lys Arg Val Leu Ser Gly Ala Thr Leu Pro
    290                   295                   300
Asp Lys Leu Arg Asp Lys Leu Lys Leu Met Lys Gln Arg Arg Lys Pro
305                   310                   315                   320
Pro Gly Phe Leu Ala Leu Val Lys Leu Leu Arg Glu Glu Glu Glu Trp
                325                   330                   335
Glu Ala Thr Leu Gly Pro Asp Arg Glu Ser Leu Glu Gly Leu Glu Val
                340                   345                   350
Ala Pro Arg Pro Pro Ala Arg Ile Thr Gly Val Gly Ala Val Pro Leu
                355                   360                   365
Pro Ala Ser Gly Asn Ser Phe Asp Ala Arg Pro Ser Gln Gly Tyr Arg
    370                   375                   380
Arg Arg Arg Gly Arg Gly Gln His Arg Arg Gly Gly Val Ala Arg Ala
385                   390                   395                   400
Gly Ser Arg Gly Ser Arg Lys Arg Lys Arg His Thr Phe Cys Tyr Ser
                405                   410                   415
Cys Gly Glu Asp Gly His Ile Arg Val Gln Cys Ile Asn Pro Ser Asn
                420                   425                   430
Leu Leu Leu Val Lys Gln Lys Lys Gln Ala Ala Val Glu Ser Gly Asn
    435                   440                   445
Gly Asn Trp Ala Trp Asp Lys Ser His Pro Lys Ser Lys Ala Lys
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<210> 4159
<211> 1491
<212> DNA
<213> Homo sapiens

<400> 4159
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120
ggagcaccgt ggagaatgga gagttttctg ttgctttcag tcgttgccct tacccatcct
180
tgcctacccc tggttattgc taaaatgggt aactgacaat aaagagatta gaagtgggtt
240
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300
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360
tcccacttga tgtattggaa agtgtggagc atgtatacat cacctggtta atttcatttg
420
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480
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540
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1320
aacggggagg tggcatctct ccgcaggggc cctgcccct tgaaaaaggc tgagggctgg
1380
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ctcccactgt caggaggtca ggggcagagt gaggactcag acccgctcct ccagcagatc
1440
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1491

<210> 4160
<211> 360
<212> PRT
<213> Homo sapiens

<400> 4160
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Thr Asn Thr Glu Ser Ala Lys Ile Arg Ala Ile Glu Lys Ser Val Val
            20   25   30
Pro Trp Val Asn Asp Gln Asp Val Pro Phe Cys Pro Asp Cys Gly Asn
        35   40   45
Lys Phe Ser Ile Arg Asn Arg Arg His His Cys Arg Leu Cys Gly Ser
    50   55   60
Ile Met Cys Lys Lys Cys Met Glu Leu Ile Ser Leu Pro Leu Ala Asn
65   70   75   80
Lys Leu Thr Ser Ala Ser Lys Glu Ser Leu Ser Thr His Thr Ser Pro
                85   90   95
Ser Gln Ser Pro Asn Ser Val His Gly Ser Arg Arg Gly Ser Ile Ser
            100   105   110
Ser Met Ser Ser Val Ser Ser Val Leu Asp Glu Lys Asp Asp Asp Arg
        115   120   125
Ile Arg Cys Cys Thr His Cys Lys Asp Thr Leu Leu Lys Arg Glu Gln
    130   135   140
Gln Ile Asp Glu Lys Glu His Thr Pro Asp Ile Val Lys Leu Tyr Glu
145   150   155   160
Lys Leu Arg Leu Cys Met Glu Lys Val Asp Gln Lys Ala Pro Glu Tyr
                165   170   175
Ile Arg Met Ala Ala Ser Leu Asn Ala Gly Glu Thr Thr Tyr Ser Leu
            180   185   190
Glu His Ala Ser Asp Leu Arg Val Glu Val Gln Lys Val Tyr Glu Leu
        195   200   205
Ile Asp Ala Leu Ser Lys Lys Ile Leu Thr Leu Gly Leu Asn Gln Asp
    210   215   220
Pro Pro Pro His Pro Ser Asn Leu Arg Leu Gln Arg Met Ile Arg Tyr
225   230   235   240
Ser Ala Thr Leu Phe Val Gln Glu Lys Leu Leu Gly Leu Met Ser Leu
                245   250   255
Pro Thr Lys Glu Gln Phe Glu Glu Leu Lys Lys Lys Arg Lys Glu Glu
            260   265   270
Met Glu Arg Lys Arg Ala Val Glu Arg Gln Ala Ala Leu Glu Ser Gln
        275   280   285
Arg Arg Leu Glu Glu Arg Gln Ser Gly Leu Ala Ser Arg Ala Ala Asn
    290   295   300
Gly Glu Val Ala Ser Leu Arg Arg Gly Pro Ala Pro Leu Lys Lys Ala
305   310   315   320
Glu Gly Trp Leu Pro Leu Ser Gly Gly Gln Gly Gln Ser Glu Asp Ser
                325   330   335
Asp Pro Leu Leu Gln Gln Ile His Asn Ile Thr Ser Phe Ile Arg Gln

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      Ala Lys Ala Ala Gly Pro His Gly
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<210> 4161
<211> 3316
<212> DNA
<213> Homo sapiens

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240
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300
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tggttgacaa tagaaacata caagaatatt gaaagttaca gagcttgtgg ttccacaatt
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gcttgtgatc agtttcgttg tggtaatgga aagtgtatac cagaagcctg gaaatgtaat
600
aacatggatg aatgtggaga tagttccgat gaagagatct gtgccaaaga agcaaatcct
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720
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1140
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1200
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1260
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1320
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2700
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2760
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2880
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2940
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3120
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3180
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3316
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<210> 4162
<211> 859
<212> PRT
<213> Homo sapiens

<400> 4162

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            20                  25                  30
Glu His Ser Glu Asn Val His Ile Ser Gly Val Ser Thr Ala Cys Gly
        35                  40                  45
Glu Thr Pro Glu Gln Ile Arg Ala Pro Ser Gly Ile Ile Thr Ser Pro
    50                  55                  60
Gly Trp Pro Ser Glu Tyr Pro Ala Lys Ile Asn Cys Ser Trp Phe Ile
65                  70                  75                  80
Arg Ala Asn Pro Gly Glu Ile Ile Thr Ile Ser Phe Gln Asp Phe Asp
                85                  90                  95
Ile Gln Gly Ser Arg Arg Cys Asn Leu Asp Trp Leu Thr Ile Glu Thr
            100                 105                 110
Tyr Lys Asn Ile Glu Ser Tyr Arg Ala Cys Gly Ser Thr Ile Pro Pro
        115                 120                 125
Pro Tyr Ile Ser Ser Gln Asp His Ile Trp Ile Arg Phe His Ser Asp
    130                 135                 140
Asp Asn Ile Ser Arg Lys Gly Phe Arg Leu Ala Tyr Phe Ser Gly Lys
145                 150                 155                 160
Ser Glu Glu Pro Asn Cys Ala Cys Asp Gln Phe Arg Cys Gly Asn Gly
                165                 170                 175
Lys Cys Ile Pro Glu Ala Trp Lys Cys Asn Asn Met Asp Glu Cys Gly
            180                 185                 190
Asp Ser Ser Asp Glu Glu Ile Cys Ala Lys Glu Ala Asn Pro Pro Thr
        195                 200                 205
Ala Ala Ala Phe Gln Pro Cys Ala Tyr Asn Gln Phe Gln Cys Leu Ser
    210                 215                 220
Arg Phe Thr Lys Val Tyr Thr Cys Leu Pro Glu Ser Leu Lys Cys Asp
225                 230                 235                 240
Gly Asn Ile Asp Cys Leu Asp Leu Gly Asp Glu Ile Asp Cys Asp Val
                245                 250                 255
Pro Thr Cys Gly Gln Trp Leu Lys Tyr Phe Tyr Gly Thr Phe Asn Ser
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              260                    265                    270
Pro Asn Tyr Pro Asp Phe Tyr Pro Pro Gly Ser Asn Cys Thr Trp Leu
          275                280                285
Ile Asp Thr Gly Asp His Arg Lys Val Ile Leu Arg Phe Thr Asp Phe
      290                295                300
Lys Leu Asp Gly Thr Gly Tyr Gly Asp Tyr Val Lys Ile Tyr Asp Gly
305                310                315                320
Leu Glu Glu Asn Pro His Lys Leu Leu Arg Val Leu Thr Ala Phe Asp
          325                330                335
Ser His Ala Pro Leu Thr Val Val Ser Ser Ser Gly Gln Ile Arg Val
          340                345                350
His Phe Cys Ala Asp Lys Val Asn Ala Ala Arg Gly Phe Asn Ala Thr
          355                360                365
Tyr Gln Val Asp Gly Phe Cys Leu Pro Trp Glu Ile Pro Cys Gly Gly
      370                375                380
Asn Trp Gly Cys Tyr Thr Glu Gln Gln Arg Cys Asp Gly Tyr Trp His
385                390                395                400
Cys Pro Asn Gly Arg Asp Glu Thr Asn Cys Thr Met Cys Gln Lys Glu
              405                410                415
Glu Phe Pro Cys Ser Arg Asn Gly Val Cys Tyr Pro Arg Ser Asp Arg
          420                425                430
Cys Asn Tyr Gln Asn His Cys Pro Asn Gly Ser Asp Glu Lys Asn Cys
          435                440                445
Phe Phe Cys Gln Pro Gly Asn Phe His Cys Lys Asn Asn Arg Cys Val
      450                455                460
Phe Glu Ser Trp Val Cys Asp Ser Gln Asp Asp Cys Gly Asp Gly Ser
465                470                475                480
Asp Glu Glu Asn Cys Pro Val Ile Val Pro Thr Arg Val Ile Thr Ala
              485                490                495
Ala Val Ile Gly Ser Leu Ile Cys Gly Leu Leu Leu Val Ile Ala Leu
          500                505                510
Gly Cys Thr Cys Lys Leu Tyr Ser Leu Arg Met Phe Glu Arg Arg Ser
          515                520                525
Phe Glu Thr Gln Leu Ser Arg Val Glu Ala Glu Leu Leu Arg Arg Glu
      530                535                540
Ala Pro Pro Ser Tyr Gly Gln Leu Ile Ala Gln Gly Leu Ile Pro Pro
545                550                555                560
Val Glu Asp Phe Pro Val Cys Ser Pro Asn Gln Ala Ser Val Leu Glu
          565                570                575
Asn Leu Arg Leu Ala Val Arg Ser Gln Leu Gly Phe Thr Ser Val Arg
          580                585                590
Leu Pro Met Ala Gly Arg Ser Ser Asn Ile Trp Asn Arg Ile Phe Asn
      595                600                605
Phe Ala Arg Ser Arg His Ser Gly Ser Leu Ala Leu Val Ser Ala Asp
      610                615                620
Gly Asp Glu Val Val Pro Ser Gln Ser Thr Ser Arg Glu Pro Glu Arg
625                630                635                640
Asn His Thr His Arg Ser Leu Phe Ser Val Glu Ser Asp Asp Thr Asp
              645                650                655
Thr Glu Asn Glu Arg Arg Asp Met Ala Gly Ala Ser Gly Gly Val Ala
          660                665                670
Ala Pro Leu Pro Gln Lys Val Pro Pro Thr Thr Ala Val Glu Ala Thr
      675                680                685
Val Gly Ala Cys Ala Ser Ser Ser Thr Gln Ser Thr Arg Gly Gly His
```

```
           690                      695                      700
Ala Asp Asn Gly Arg Asp Val Thr Ser Val Glu Pro Pro Ser Val Ser
705                      710                      715                      720
Pro Ala Arg His Gln Leu Thr Ser Ala Leu Ser Arg Met Thr Gln Gly
                    725                      730                      735
Leu Arg Trp Val Arg Phe Thr Leu Gly Arg Ser Ser Ser Leu Ser Gln
                    740                      745                      750
Asn Gln Ser Pro Leu Arg Gln Leu Asp Asn Gly Val Ser Gly Arg Glu
                    755                      760                      765
Asp Asp Asp Asp Val Glu Met Leu Ile Pro Ile Ser Asp Gly Ser Ser
                    770                      775                      780
Asp Phe Asp Val Asn Asp Cys Ser Arg Pro Leu Leu Asp Leu Ala Ser
785                      790                      795                      800
Asp Gln Gly Gln Gly Leu Arg Gln Pro Tyr Asn Ala Thr Asn Pro Gly
                    805                      810                      815
Val Arg Pro Ser Asn Arg Asp Gly Pro Cys Glu Arg Cys Gly Ile Val
                    820                      825                      830
His Thr Ala Gln Ile Pro Asp Thr Cys Leu Glu Val Thr Leu Lys Asn
                    835                      840                      845
Glu Thr Ser Asp Asp Glu Ala Leu Leu Leu Cys
850                      855
```

<210> 4163
<211> 568
<212> DNA
<213> Homo sapiens

<400> 4163
ntctagaacc tttccttgtg gccagggcag gctcaggaca ggctgccgtc agccaggccc
60
actccagggc tcccaggtca gagtggccat ggtagcttac aatgcggcct gcaggaccca
120
gcaggcagcc ggcccctctc ccctcccttt tcccgcctgc gctctgaagg ctccaagtca
180
gtgttgcccc agtggctctg ggggatgaag gggatcccgg tcccatctgg acaccctcaa
240
gctgatggac gcagagctct ggtgcgggca gtgggtcacc cccaggacct gctgaccgaa
300
gcctctcccc gctgcccggc aggcccttca ccgctgagat ctaccggcag aaagcctccg
360
ggtcccccaa gaggaggtga tttagctgcc ccagttttgt ttaaggcctg ggccacctcc
420
ttggcttgcc ccaagtggca ggccttgcgc agggcgagaa tggtgcctgt tgttcagggc
480
tcgcccccgg cgtgggctgc cccagtgcct tggaacctgc tgccttgggg accctggacg
540
tgccgacata tggccattga gctccaac
568

<210> 4164
<211> 187
<212> PRT
<213> Homo sapiens
```

<400> 4164
Asn Leu Ser Leu Trp Pro Gly Gln Ala Gln Asp Arg Leu Pro Ser Ala
 1               5                  10                  15
Arg Pro Thr Pro Gly Leu Pro Gly Gln Ser Gly His Gly Ser Leu Gln
            20                  25                  30
Cys Gly Leu Gln Asp Pro Ala Gly Ser Arg Pro Leu Ser Pro Pro Phe
        35                  40                  45
Ser Arg Leu Arg Ser Glu Gly Ser Lys Ser Val Leu Pro Gln Trp Leu
    50                  55                  60
Trp Gly Met Lys Gly Ile Pro Val Pro Ser Gly His Pro Gln Ala Asp
65                  70                  75                  80
Gly Arg Arg Ala Leu Val Arg Ala Val Gly His Pro Gln Asp Leu Leu
                85                  90                  95
Thr Glu Ala Ser Pro Arg Cys Pro Ala Gly Pro Ser Pro Leu Arg Ser
            100                 105                 110
Thr Gly Arg Lys Pro Pro Gly Pro Pro Arg Gly Gly Asp Leu Ala Ala
        115                 120                 125
Pro Val Leu Phe Lys Ala Trp Ala Thr Ser Leu Ala Cys Pro Lys Trp
    130                 135                 140
Gln Ala Leu Arg Arg Ala Arg Met Val Pro Val Val Gln Gly Ser Pro
145                 150                 155                 160
Pro Ala Trp Ala Ala Pro Val Pro Trp Asn Leu Leu Pro Trp Gly Pro
                165                 170                 175
Trp Thr Cys Arg His Met Ala Ile Glu Leu Gln
            180                 185

<210> 4165
<211> 717
<212> DNA
<213> Homo sapiens

<400> 4165
ngcgtgcagg aacgcttcgt ggctggctcc ctggctggtg ccacagccca aaccatcatt
60
taccctatgg aggtgctgaa gacgcggctg accttgcgcc ggacgggcca gtataagggg
120
ctgctggact cgccaggcg tatcctggag agggagggggc cccgtgcctt ctaccgcggc
180
tacctcccca acgtgctggg catcatcccc tatgcgggca tcgacctggc cgtctacgag
240
actctgaaga actggtggct tcagcagtac agccacgact cggcagaccc aggcatcctc
300
gtgctcctgg cctgcggtac catatccagc acctgcggcc agatagccag ttacccgctg
360
gccctggtcc ggacccgcat gcaggcacaa ggatttcatc atgttgccca ggctcatctc
420
gaactcgtgg ggtcaaggaa ttcgccagcc ttcagcctcc aacgtgctg ggattacagg
480
aagccggtgg tcatgccatg agcagcctta tggagaggac catgtggtaa ggaactcagc
540
caatagccat gtaactgagc ttggaagagg atcttgctgt cctggccaac atctcactgc
600
aattctatca gttgaattcc ctggatagtc caagctttgt ggatccctcc accagaacaa
660

```
ctggatccca gtacctgaat cctgaatctt agactcttat acttcaaaca ctgatca
717
```

```
<210> 4166
<211> 166
<212> PRT
<213> Homo sapiens
```

```
<400> 4166
Xaa Val Gln Glu Arg Phe Val Ala Gly Ser Leu Ala Gly Ala Thr Ala
 1               5                  10                  15
Gln Thr Ile Ile Tyr Pro Met Glu Val Leu Lys Thr Arg Leu Thr Leu
            20                  25                  30
Arg Arg Thr Gly Gln Tyr Lys Gly Leu Leu Asp Cys Ala Arg Arg Ile
        35                  40                  45
Leu Glu Arg Glu Gly Pro Arg Ala Phe Tyr Arg Gly Tyr Leu Pro Asn
    50                  55                  60
Val Leu Gly Ile Ile Pro Tyr Ala Gly Ile Asp Leu Ala Val Tyr Glu
65                  70                  75                  80
Thr Leu Lys Asn Trp Trp Leu Gln Gln Tyr Ser His Asp Ser Ala Asp
                85                  90                  95
Pro Gly Ile Leu Val Leu Leu Ala Cys Gly Thr Ile Ser Ser Thr Cys
            100                 105                 110
Gly Gln Ile Ala Ser Tyr Pro Leu Ala Leu Val Arg Thr Arg Met Gln
        115                 120                 125
Ala Gln Gly Phe His His Val Ala Gln Ala His Leu Glu Leu Val Gly
        130                 135                 140
Ser Arg Asn Ser Pro Ala Phe Ser Leu Pro Thr Cys Trp Asp Tyr Arg
145                 150                 155                 160
Lys Pro Val Val Met Pro
                165
```

```
<210> 4167
<211> 897
<212> DNA
<213> Homo sapiens
```

```
<400> 4167
ngccggcacg ccgcccagca tggtccggga aatcaggcat ctctgggtgg gcaatttacc
60
cgagaacgtg cgggaagaga agatcatcga gcatttcaaa cggctggtgt gcaatggcgt
120
gatctcagcc caccgcaact tccgcctcct gggatcaagc aatcctcctg cttcagcctc
180
ctgagtagct tggactacag atatggccgc gtggaaagtg tcaaaattct tcccaagagg
240
ggatctgaag gaggagtggc tgcctttgtg gattttgtgg acatcaaaag tgcacagaaa
300
gctcacaact cggtcaacaa aatgggtgac agagacctac gcacggatta taatgaacca
360
ggcaccatcc cgagtgctgc tcggggattg gatgatacag tttccatagc atctcgtagt
420
agagaggttt ctgggttcag aggaggtggt ggagggcctg cttatggtcc cccaccgtca
480
```

```
cttcatgcac gagaaggacg ttatgagcgg agacttgatg gggcttcaga taacagggag
540
cgtgcttatg aacatagtgc ctatggacac catgaacggg ggacgggagg atttgatcgg
600
acaagacatt acgatcagga ttactataga gatcctcgag agcggacttt acaacatggg
660
ctctattacg cttctcggag tcgaagtcca aatcgctttg atgctcatga cccccgatat
720
gaacctaggg ctcgcgagca gtttacactg cccagtgtgg tacacaggga tatctacagg
780
gatgatatta cccgggaggt acgaggcaga aggccagagc ggaattacca gcacagcagg
840
agtcggtcac cacattcatc ccagtctaga aatcagtctc ctcagagact ggctagc
897
```

```
<210> 4168
<211> 299
<212> PRT
<213> Homo sapiens
```

```
<400> 4168
Xaa Arg His Ala Ala Gln His Gly Pro Gly Asn Gln Ala Ser Leu Gly
1               5                   10                  15
Gly Gln Phe Thr Arg Glu Arg Ala Gly Arg Glu Asp His Arg Ala Phe
            20                  25                  30
Gln Thr Ala Gly Val Gln Trp Arg Asp Leu Ser Pro Pro Gln Leu Pro
        35                  40                  45
Pro Pro Gly Ile Lys Gln Ser Ser Cys Phe Ser Leu Leu Ser Ser Leu
    50                  55                  60
Asp Tyr Arg Tyr Gly Arg Val Glu Ser Val Lys Ile Leu Pro Lys Arg
65                  70                  75                  80
Gly Ser Glu Gly Gly Val Ala Ala Phe Val Asp Phe Val Asp Ile Lys
                85                  90                  95
Ser Ala Gln Lys Ala His Asn Ser Val Asn Lys Met Gly Asp Arg Asp
            100                 105                 110
Leu Arg Thr Asp Tyr Asn Glu Pro Gly Thr Ile Pro Ser Ala Ala Arg
        115                 120                 125
Gly Leu Asp Asp Thr Val Ser Ile Ala Ser Arg Ser Arg Glu Val Ser
    130                 135                 140
Gly Phe Arg Gly Gly Gly Gly Pro Ala Tyr Gly Pro Pro Pro Ser
145                 150                 155                 160
Leu His Ala Arg Glu Gly Arg Tyr Glu Arg Arg Leu Asp Gly Ala Ser
                165                 170                 175
Asp Asn Arg Glu Arg Ala Tyr Glu His Ser Ala Tyr Gly His His Glu
            180                 185                 190
Arg Gly Thr Gly Gly Phe Asp Arg Thr Arg His Tyr Asp Gln Asp Tyr
        195                 200                 205
Tyr Arg Asp Pro Arg Glu Arg Thr Leu Gln His Gly Leu Tyr Tyr Ala
    210                 215                 220
Ser Arg Ser Arg Ser Pro Asn Arg Phe Asp Ala His Asp Pro Arg Tyr
225                 230                 235                 240
Glu Pro Arg Ala Arg Glu Gln Phe Thr Leu Pro Ser Val Val His Arg
                245                 250                 255
Asp Ile Tyr Arg Asp Asp Ile Thr Arg Glu Val Arg Gly Arg Arg Pro
```

```
                260                 265                 270
     Glu Arg Asn Tyr Gln His Ser Arg Ser Arg Ser Pro His Ser Ser Gln
                275                 280                 285
     Ser Arg Asn Gln Ser Pro Gln Arg Leu Ala Ser
             290                 295
```

<210> 4169
<211> 4743
<212> DNA
<213> Homo sapiens

<400> 4169

```
gtggttatgg agcagctgcc ggggggtgcca ccaggccccc cccaccccgt tcgaccgcca
60
cccccgcctc caccacccat gccccctgcag ctcgaggccc acctccgcag ccatggcctg
120
gagcccgcgg cccccagccc ccgcctgcga cccgaggaga gcctggatcc gccaggcgcc
180
atgcaggaat tgctcggggc tctggagccg ctgccccccgg cgcctgggga tactggcgta
240
ggcccaccaa actcggaggg caaggatccc gcaggcgcct accgcagccc cagcccgcaa
300
ggcaccaagg cgccgcgttt cgtgccgctc acctccatct gcttccctga ctccttgctc
360
caagacgagg agcgcagctt cttccccacc atggaggaga tgttcggtgg aggggccgcg
420
gacgactacg gcaaggccgg gccacctgag gacgagggg accccaaggc tggcgctggg
480
ccaccccccg gccccccctgc ttatgatccc tatgggcccct actgtcctgg ccgggcgtcg
540
ggagccgggc ccgagacacc gggcctgggc ctggacccca acaaaccgcc tgaactgccc
600
tccacggtca acgccgagcc gctgggcctg atccagagtg gcccccacca ggcggcgcca
660
ccaccccccgc ctccgccacc gccgcctccc gcgccggcct ccgaacccaa gggtggcctc
720
acctcgccca tcttctgctc taccaagcca aagaagctgc tcaagacatc ctccttccac
780
ctgctgcggc gccgcgaccc acccttccag acccccaaga agctgtacgc ccaggagtac
840
gagttcgagg cggacgagga caaggccgat gttcccgccg acatccgcct caacccccgg
900
cgcttgcctg acctggtctc cagctgccgc tcccgtccgg ccctctcgcc actgggggac
960
atcgacttct gcctacccaa cccaggaccc gatggccccc ggcgccgtgg ccgcaagccc
1020
acgaaggcga aacgtgatgg gccaccccgg ccacggggga ggccccggat ccgcccccctg
1080
gaggtcccga ccactgcggg gcccgcctcg gcctccacgc ccaccgatgg cgccaagaaa
1140
cccggggggcc ggggccgagg ccggggtcga aaggctgagg aggcagggg cacccggttg
1200
gagcccctga agccacttaa gatcaagctg tctgtcccca aggctggcga gggtctgggga
1260
```

```
acctcatcgg gtgatgccat atcaggcact gaccacaaca gcctggactc gagcctgact
1320
cgggagaaga tcgaggccaa gattaaggag gtggaggaga agcagccgga gatgaagtcg
1380
ggtttcatgg cctccttctt ggacttcctc aagtcaggca agcgccaccc accactctac
1440
caggcgggcc tgacgcctcc gctcagccct cccaagagtg tgccaccctc tgtgccagcc
1500
cgaggcctgc agccccagcc ccctgccacc cctgctgtgc cacatccccc accttccgga
1560
gcctttgggc ttggggcgc cctggaggct gcagagagtg agggtctggg gcttggctgc
1620
ccttcaccct gcaagcggct tgatgaggag ctgaagcgga acctcgagac gctgccctcc
1680
ttctcctcgg atgaggaaga ctctgtcgcc aagaaccgag acctgcagga gagcatctcc
1740
tccgccatct ctgccctcga tgacccaccc cttgctgggc caaaagacac ttccacccca
1800
gatgggccgc ccttggcccc cgcggctgca gttccagggc caccccctct tccggggctc
1860
cccagtgcca acagcaatgg cactcccgag ccccgctgc tggaggagaa acccccaccc
1920
actccacctc ctgccccgac tcctcagcct cagcctccgc caccccctcc gccgccacag
1980
ccagccctgc cctcgccacc cccgctggtg gcccccacgc ccagctcacc accgccaccg
2040
ccgctgccgc cgccacctcc accagccatg ccctcgcctc caccaccacc cccaccagcc
2100
gctgccccac tggctgctcc tcctgaggag cccgccgccc cgtctcccga agaccccgag
2160
ctgccggaca cccggcccct gcatctggcc aaaaagcagg agacggcggc agtgtgtggg
2220
gagacggacg aggaggccgg cgagagtggc ggagagggca tcttccggga acgggacgag
2280
ttcgtcatcc gtgctgagga catcccttcc ctcaagctgg cgttgcagac ggggcgtgaa
2340
cccccaccca tctggcgagt ccagaaggcc cttctgcaga aattcactcc ggagatcaag
2400
gacggccaga ggcagttttg tgccaccagt aattatttgg ggtattttgg ggatgcaaaa
2460
aatcggtacc agcgcctcta tgtaaagttc ctggaaaatg tcaataagaa ggactacgtg
2520
agggtctgtg ctcggaaacc ctggcatcgg cccccagtgc cagtcagacg ctctgggcag
2580
gccaagaacc ccgtatctgc tgggggtagc tctgcacctc cccctaaggc cccagcacca
2640
cctcccaagc ctgagacccc tgaaaagacg acatctgaga agcccccagc agcagactcc
2700
tgagacggcc atgcctgagc cccctgcccc cgagaagccc tccctcctgc ggcctgttga
2760
gaaggaaaag gagaaggaga aggtgacacg tggagagcgg ccattgcggg gtgagcgggc
2820
caccagcgga cggcagacac ggccagagcg gagtctcgcc acgggacaac ctgccacatc
2880
```

3356

```
ccggctgccc aaagcccggc ctaccaaggt gaaggctgaa ccgcccccta agaagaggaa
2940
gaaatggctg aaggaggcag gcggcaacgc tacagcaggc gggggcccac caggcagctc
3000
ctcggactcg gagtcctccc ctggagcccc cagcgaggac gagcgggcag tacctgggcg
3060
tctgctcaaa accagggcga tgcgggagat gtaccggagc tacgtggaga tgttggtgag
3120
cacagcactt gacccagaca tgatccaggc cctggaggac acgcatgacg agctgtacct
3180
gccccccatg cggaagatag acggcctgct gaatgagcac aagaagaaag tcctgaagcg
3240
gctgtcgcta agcccagccc tgcaggatgc tctgcacacg ttcccacagc tgcaagtgga
3300
gcagagtggg gagggctctc cggaagaggg ggctgtgcgg ctgcggcctg ctggggaacc
3360
ctacaaccgc aagacgctca gcaagctcaa gaggagcgtg gtcagagccc aggagttcaa
3420
ggttgagctg gaaaagtcgg gatactatac actctaccat tcgctccacc actataaata
3480
ccacaccttc ctgcgctgcc gggaccagac cctggccatc gagggcggcg ccgaggacct
3540
gggccaggag gaggtggtcc agcagtgcat gcggaaccag ccgtggctgg aacagctctt
3600
tgactccttc agtgacctgc tggcccaagc acaggcccac agccgctgcg ggtgaccccg
3660
ccccagcttg tgaggggggc gcctcctcca tgaaccgaga attgggacag aaccgtgtcc
3720
tcaggagcta acacctgggc tccatcgccg gggaaagggg gtcatgggtc agggtgtgtc
3780
tgtgctgccc cctccagggc agggttcaaa gtccgactcc cgcgcccgcc aagaagccgc
3840
tttccgctgg cccgcagccg ccgcgacttc ggcacagttt ctccctctgg ctagtctccc
3900
aaacggtttc cctctcccct tgccccgacc cccctccac agccacagcc cccgcccct
3960
ccaccttgta cataatgtat aggaaaagtc tatgtatggc tggggggggt ggggtggctt
4020
cagagagctg ggggacccct tccccccaag tcccccctgc aggccaagat ctttgctaaa
4080
ggccattccc tccgcagggc atttggcgtc gggtgggagg ggaaaacgca tcttgttaat
4140
tatttttaat cttatttatt gtacatacct ggggcagggg cttggggagg tggaggggg
4200
agaagggtcc cctctctctg cccctcccac tccttttcta cggcgatttg tctgtgtctg
4260
gcccccaccc actgcccatc ccccattgtt gtctggatgt ggttctattt tttatcggtc
4320
tcctttcccc tcctccccgt tctcgccccc gccccacccc ctgctcccac tacccttgt
4380
ctcttgctct ttcttgggct tctgtacaac tcaacttgta tacactgtgt acacacaacc
4440
agccaaacga aaacccaacg gcaaacactt taccggcagg ctggagtgcc tctgtcctgc
4500
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3357

ggcgctggag tgggtggcag tggtagcagg ggcagaggtt ctggaacggg actttcccag
4560
agccctgggc agtggggggc ctgaggctgg catatgttct gtgtccccgc acagcagagt
4620
atcccaccct gaaatttaat gacttcagac aacaaatatt tatcactggg gggtttcttt
4680
tgtttttag ctaaagacag ggtctcgctc tgtcacccag gttggagtgc agtggcatga
4740
tca
4743

<210> 4170
<211> 900
<212> PRT
<213> Homo sapiens

<400> 4170
Val Val Met Glu Gln Leu Pro Gly Val Pro Pro Gly Pro Pro His Pro
 1   5   10   15
Val Arg Pro Pro Pro Pro Pro Pro Pro Met Pro Leu Gln Leu Glu
             20   25   30
Ala His Leu Arg Ser His Gly Leu Glu Pro Ala Ala Pro Ser Pro Arg
         35   40   45
Leu Arg Pro Glu Glu Ser Leu Asp Pro Pro Gly Ala Met Gln Glu Leu
     50   55   60
Leu Gly Ala Leu Glu Pro Leu Pro Pro Ala Pro Gly Asp Thr Gly Val
65   70   75   80
Gly Pro Pro Asn Ser Glu Gly Lys Asp Pro Ala Gly Ala Tyr Arg Ser
                 85   90   95
Pro Ser Pro Gln Gly Thr Lys Ala Pro Arg Phe Val Pro Leu Thr Ser
             100   105   110
Ile Cys Phe Pro Asp Ser Leu Leu Gln Asp Glu Glu Arg Ser Phe Phe
         115   120   125
Pro Thr Met Glu Glu Met Phe Gly Gly Gly Ala Ala Asp Asp Tyr Gly
     130   135   140
Lys Ala Gly Pro Pro Glu Asp Glu Gly Asp Pro Lys Ala Gly Ala Gly
145   150   155   160
Pro Pro Pro Gly Pro Pro Ala Tyr Asp Pro Tyr Gly Pro Tyr Cys Pro
                 165   170   175
Gly Arg Ala Ser Gly Ala Gly Pro Glu Thr Pro Gly Leu Gly Leu Asp
             180   185   190
Pro Asn Lys Pro Pro Glu Leu Pro Ser Thr Val Asn Ala Glu Pro Leu
         195   200   205
Gly Leu Ile Gln Ser Gly Pro His Gln Ala Ala Pro Pro Pro Pro Pro
     210   215   220
Pro Pro Pro Pro Pro Ala Pro Ala Ser Glu Pro Lys Gly Gly Leu
225   230   235   240
Thr Ser Pro Ile Phe Cys Ser Thr Lys Pro Lys Lys Leu Leu Lys Thr
                 245   250   255
Ser Ser Phe His Leu Leu Arg Arg Arg Asp Pro Pro Phe Gln Thr Pro
                 260   265   270
Lys Lys Leu Tyr Ala Gln Glu Tyr Glu Phe Glu Ala Asp Glu Asp Lys
         275   280   285
Ala Asp Val Pro Ala Asp Ile Arg Leu Asn Pro Arg Arg Leu Pro Asp

3358

```
                            290                     295                     300
            Leu Val Ser Ser Cys Arg Ser Arg Pro Ala Leu Ser Pro Leu Gly Asp
            305                     310                     315                     320
            Ile Asp Phe Cys Leu Pro Asn Pro Gly Pro Asp Gly Pro Arg Arg Arg
                                325                     330                     335
            Gly Arg Lys Pro Thr Lys Ala Lys Arg Asp Gly Pro Pro Arg Pro Arg
                                340                     345                     350
            Gly Arg Pro Arg Ile Arg Pro Leu Glu Val Pro Thr Thr Ala Gly Pro
                                355                     360                     365
            Ala Ser Ala Ser Thr Pro Thr Asp Gly Ala Lys Lys Pro Arg Gly Arg
                    370                     375                     380
            Gly Arg Gly Arg Gly Arg Lys Ala Glu Glu Ala Gly Gly Thr Arg Leu
            385                     390                     395                     400
            Glu Pro Leu Lys Pro Leu Lys Ile Lys Leu Ser Val Pro Lys Ala Gly
                                405                     410                     415
            Glu Gly Leu Gly Thr Ser Ser Gly Asp Ala Ile Ser Gly Thr Asp His
                    420                     425                     430
            Asn Ser Leu Asp Ser Ser Leu Thr Arg Glu Lys Ile Glu Ala Lys Ile
                    435                     440                     445
            Lys Glu Val Glu Glu Lys Gln Pro Glu Met Lys Ser Gly Phe Met Ala
                    450                     455                     460
            Ser Phe Leu Asp Phe Leu Lys Ser Gly Lys Arg His Pro Pro Leu Tyr
            465                     470                     475                     480
            Gln Ala Gly Leu Thr Pro Pro Leu Ser Pro Pro Lys Ser Val Pro Pro
                                485                     490                     495
            Ser Val Pro Ala Arg Gly Leu Gln Pro Gln Pro Pro Ala Thr Pro Ala
                    500                     505                     510
            Val Pro His Pro Pro Pro Ser Gly Ala Phe Gly Leu Gly Gly Ala Leu
                    515                     520                     525
            Glu Ala Ala Glu Ser Glu Gly Leu Gly Leu Gly Cys Pro Ser Pro Cys
                    530                     535                     540
            Lys Arg Leu Asp Glu Glu Leu Lys Arg Asn Leu Glu Thr Leu Pro Ser
            545                     550                     555                     560
            Phe Ser Ser Asp Glu Glu Asp Ser Val Ala Lys Asn Arg Asp Leu Gln
                                565                     570                     575
            Glu Ser Ile Ser Ser Ala Ile Ser Ala Leu Asp Asp Pro Pro Leu Ala
                    580                     585                     590
            Gly Pro Lys Asp Thr Ser Thr Pro Asp Gly Pro Pro Leu Ala Pro Ala
                    595                     600                     605
            Ala Ala Val Pro Gly Pro Pro Pro Leu Pro Gly Leu Pro Ser Ala Asn
                    610                     615                     620
            Ser Asn Gly Thr Pro Glu Pro Pro Leu Leu Glu Glu Lys Pro Pro Pro
            625                     630                     635                     640
            Thr Pro Pro Pro Ala Pro Thr Pro Gln Pro Gln Pro Pro Pro Pro Pro
                                645                     650                     655
            Pro Pro Pro Gln Pro Ala Leu Pro Ser Pro Pro Pro Leu Val Ala Pro
                    660                     665                     670
            Thr Pro Ser Ser Pro Pro Pro Pro Leu Pro Pro Pro Pro Pro Pro
                    675                     680                     685
            Ala Met Pro Ser Pro Pro Pro Pro Pro Pro Ala Ala Ala Pro Leu
                    690                     695                     700
            Ala Ala Pro Pro Glu Glu Pro Ala Ala Pro Ser Pro Glu Asp Pro Glu
            705                     710                     715                     720
            Leu Pro Asp Thr Arg Pro Leu His Leu Ala Lys Lys Gln Glu Thr Ala
```

```
                         725                   730                   735
Ala Val Cys Gly Glu Thr Asp Glu Glu Ala Gly Glu Ser Gly Gly Glu
                     740                   745                   750
Gly Ile Phe Arg Glu Arg Asp Glu Phe Val Ile Arg Ala Glu Asp Ile
                 755                   760                   765
Pro Ser Leu Lys Leu Ala Leu Gln Thr Gly Arg Glu Pro Pro Pro Ile
             770                   775                   780
Trp Arg Val Gln Lys Ala Leu Leu Gln Lys Phe Thr Pro Glu Ile Lys
         785                   790                   795                   800
Asp Gly Gln Arg Gln Phe Cys Ala Thr Ser Asn Tyr Leu Gly Tyr Phe
                     805                   810                   815
Gly Asp Ala Lys Asn Arg Tyr Gln Arg Leu Tyr Val Lys Phe Leu Glu
                 820                   825                   830
Asn Val Asn Lys Lys Asp Tyr Val Arg Val Cys Ala Arg Lys Pro Trp
             835                   840                   845
His Arg Pro Pro Val Pro Val Arg Arg Ser Gly Gln Ala Lys Asn Pro
         850                   855                   860
Val Ser Ala Gly Gly Ser Ser Ala Pro Pro Pro Lys Ala Pro Ala Pro
     865                   870                   875                   880
Pro Pro Lys Pro Glu Thr Pro Glu Lys Thr Thr Ser Glu Lys Pro Pro
                     885                   890                   895
Ala Ala Asp Ser
                 900
```

```
<210> 4171
<211> 889
<212> DNA
<213> Homo sapiens
```

```
<400> 4171
nngcaggcct tctggtgatc gccagcgctg tcgtctctga gcgtggatcc cagaacctgg
60
acagctgtgg cggccgccgt ttcccggtcc cgtccagacg ctgtctggcg agatcggacg
120
gtgagcctaa ggcggaacgc gtgaggcgct tttgagtctg gggtccgggg ccgagagcag
180
gcggaaagag aggggacccg gcagaccccg agtggccgcc gctgcggggc ccaagtcctt
240
ggctgctgag tggtgacagt agcccagccc gccggccaga tatggtccag acctgtacat
300
gaataacttt ggttagtcag agtgaaatat tcaataatga gtggtgcagc tttgggactt
360
gagattgttt ttgtcttttt tctggcatta tttctgcttc atcgatatgg agactttaag
420
aaacagcata gacttgtgat tattggaaca ctgcttgctt ggtatctctg ctttcttatt
480
gtcttcatac tgcctctgga tgttagtacg acaatataca accggtgcaa gcatgctgct
540
caaattcaag ccctcctgag aatagcaaca ttacaggatt gtgcaactgc taaccctgtt
600
ccaagccagc atccttgttt caagccatgg agttacattc ctgatggaat catgccaatt
660
ttctggaggg tagtgtattg gacgtcacaa tttttaacat ggattctctt accttttatg
720
```

```
cagtcatatg caagatcagg agggtttttcc atcactggaa agatcaaaac tgcactaatt
780
gagaatgcaa tctactatgg cacctatttg ctgattttttg gagcattttt aatttatgta
840
gctgtaaacc cacatttaca tttagaatgg aaccagcttc agacaattg
889


<210> 4172
<211> 184
<212> PRT
<213> Homo sapiens


<400> 4172
Met Ser Gly Ala Ala Leu Gly Leu Glu Ile Val Phe Val Phe Phe Leu
 1               5                   10                  15
Ala Leu Phe Leu Leu His Arg Tyr Gly Asp Phe Lys Lys Gln His Arg
            20                  25                  30
Leu Val Ile Ile Gly Thr Leu Leu Ala Trp Tyr Leu Cys Phe Leu Ile
        35                  40                  45
Val Phe Ile Leu Pro Leu Asp Val Ser Thr Thr Ile Tyr Asn Arg Cys
    50                  55                  60
Lys His Ala Ala Gln Ile Gln Ala Leu Leu Arg Ile Ala Thr Leu Gln
65                  70                  75                  80
Asp Cys Ala Thr Ala Asn Pro Val Pro Ser Gln His Pro Cys Phe Lys
                85                  90                  95
Pro Trp Ser Tyr Ile Pro Asp Gly Ile Met Pro Ile Phe Trp Arg Val
            100                 105                 110
Val Tyr Trp Thr Ser Gln Phe Leu Thr Trp Ile Leu Leu Pro Phe Met
        115                 120                 125
Gln Ser Tyr Ala Arg Ser Gly Gly Phe Ser Ile Thr Gly Lys Ile Lys
        130                 135                 140
Thr Ala Leu Ile Glu Asn Ala Ile Tyr Tyr Gly Thr Tyr Leu Leu Ile
145                 150                 155                 160
Phe Gly Ala Phe Leu Ile Tyr Val Ala Val Asn Pro His Leu His Leu
                165                 170                 175
Glu Trp Asn Gln Leu Gln Thr Ile
                180


<210> 4173
<211> 404
<212> DNA
<213> Homo sapiens


<400> 4173
tgatcatctc ccaaaggctt cactccaaat atcatcacat tgcggattac agattcaaca
60
taggaatttg gggggacaca gacattcagt ccatagtagc aagcttaagg tttctggggt
120
ctagagacaa aatgttccga ttagtgtgct tcagtttcat catgagattt aatagtaata
180
actacgttat ggaatggttt gagaatttaa tgagtaacct ggagctgggc acccctgtgt
240
caaagtgcgc tagggcactg ggttcggcta aaggcccatt gctatgctgc tgcgtgcagg
300
```

```
catggcatct acaagatgga gactctttcc tgacacacga ccattactac atgctaaatg
360
acctcccaga ctctagctcg cctgtggctg ccacctttat gttt
404
```

```
<210> 4174
<211> 91
<212> PRT
<213> Homo sapiens
```

```
<400> 4174
Met Phe Arg Leu Val Cys Phe Ser Phe Ile Met Arg Phe Asn Ser Asn
 1               5                   10                  15
Asn Tyr Val Met Glu Trp Phe Glu Asn Leu Met Ser Asn Leu Glu Leu
            20                  25                  30
Gly Thr Pro Val Ser Lys Cys Ala Arg Ala Leu Gly Ser Ala Lys Gly
        35                  40                  45
Pro Leu Leu Cys Cys Cys Val Gln Ala Trp His Leu Gln Asp Gly Asp
    50                  55                  60
Ser Phe Leu Thr His Asp His Tyr Tyr Met Leu Asn Asp Leu Pro Asp
65                  70                  75                  80
Ser Ser Ser Pro Val Ala Ala Thr Phe Met Phe
                85                  90
```

```
<210> 4175
<211> 2778
<212> DNA
<213> Homo sapiens
```

```
<400> 4175
aattccttaa ctttggaggc agtgaaacga ctaatagcag aaggtaataa agaagaacta
60
cgaaaatgtt ttggggcccg aatggagttt gggacagctg gcctccgagc tgctatggga
120
cctggaattt ctcgtatgaa tgacttgacc atcatccaga ctacacaggg attttgcaga
180
tacctggaaa aacaattcag tgacttaaag cagaaaggca tcgtgatcag ttttgacgcc
240
cgagctcatc catccagtgg gggtagcagc agaaggtttg cccgacttgc tgcaaccaca
300
tttatcagtc aggggattcc tgtgtacctc ttttctgata taacgccaac ccccttttgtg
360
cccttcacag tatcacattt gaaactttgt gctggaatca tgataactgc atctcacaat
420
ccaaagcagg ataatggtta aggtctat tgggataatg gagctcagat catttctcct
480
cacgataaag ggatttctca agctattgaa gaaaatctag aaccgtggcc tcaagcttgg
540
gacgattctt taattgatag cagtccactt ctccacaatc cgagtgcttc catcaataat
600
gactactttg aagaccttaa aaagtactgt ttccacagga gcgtgaacag ggagacaaag
660
gtgaagtttg tgcacacctc tgtccatggg gtgggtcata gctttgtgca gtcagctttc
720
```

```
aaggctttn gaccttgttc ctccnntgag gctgttcctg aacagaaaga tccggatcct
780
gagtttccaa cagtgaaata cccgaatccc gaagagggga aaggtgtctt gactttgtct
840
tttgctttgg ctgacaaaac caaggccaga attgttttag ctaacgaccc ggatgctgat
900
agacttgctg tggcagaaaa gcaagacagt ggtgaatgga gggtgttttc aggcaatgag
960
ttgggggccc tcctgggctg gtggcttttt acatcttgga aagagaagaa ccaggatcgc
1020
agtgctctca aagacacgta catgttgtcc agcaccgtct cctccaaaat cttgcgggcc
1080
attgccttaa aggaaggttt tcattttgag gaaacattaa ctggctttaa gtggatggga
1140
aacagagcca aacagctaat agaccagggg aaaactgttt tatttgcatt tgaagaagct
1200
attggataca tgtgctgccc ttttgttctg gacaaagatg gagtcagtgc cgctgtcata
1260
agtgcagagt tggctagctt cctagcaacc aagaatttgt ctttgtctca gcaactaaag
1320
gccatttatg tggagtatgg ctaccatatt actaaagctt cctattttat ctgccatgat
1380
caagaaacca ttaagaaatt atttgaaaac ctcagaaact acgatggaaa aaataattat
1440
ccaaaagctt gtggcaaatt tgaaatttct gccattaggg accttacaac tggctatgat
1500
gatagccaac ctgataaaaa agctgttctt cccactagta aaagcagcca aatgatcacc
1560
ttcacctttg ctaatggagg cgtggccacc atgcgcacca gtgggacaga gcccaaaatc
1620
aagtactatg cagagctgtg tgccccacct gggaacagtg atcctgagca gctgaagaag
1680
gaactgaatg aactggtcag tgctattgaa gaacattttt ccagccaca gaagtacaat
1740
ctgcagccaa aagcagacta aaatagtcca gccttgggta tacttgcatt tacctacaat
1800
taagctgggt ttaacttgtt aagcaatatt tttaagggcc aaatgattca aaacatcaca
1860
ggtatttatg tgttttacaa agacctacat tcctcattgt ttcatgtttg acctttaagg
1920
tgaaaaaaga aaatggccaa acccaacaaa ctaacattcc tactaaaaag ttgagcttgg
1980
acatattttg aatttttgta agtgaagatt tttaaactga ctaacttaaa aaaatagatt
2040
gtaattgatg tgccttaatt tgcataaatc ataaatgtat gtcctctctg taattgtttt
2100
aatgtgtgct tgaaatatcc agaaaaccta tggagttagt aaattctggg ctgtcatatg
2160
taggatagcc acttttttagg tatatgtaca tttatatttc tatcaattcc ttagaaagta
2220
aaataaatga atagatcaaa tgttgtgttc atgtttgggg aaaatataat ttgcagaaac
2280
ctatgaagta gagcaaagat gctttaaaaa gataagtttt tttgaactaa attttttta
2340
```

```
gttctaataa tgcacatagg atattagtac atcgtacacg tgctaggaaa aaacagcttc
2400
agtgtctttg tttaatgtgt tgaaactcat cttttttaaat cttgaaaaac caattgttta
2460
cttgaaactt gaaagtagca tattttttctg ttttttggtt gtttgttcat ttgtattagc
2520
acaatttaat gtaattcctg gtttggaggc agcaagacct atgagcaaga actatttact
2580
tgaccctcgg ttttttctct tgttcttgtg tggtctgaaa tctaaaacta gactttatta
2640
tgataggatt cctataagcc aatttctaat tacaatagaa ttattattta atccgtacct
2700
ttcattcttc tcataatcgt ggggattacc ggcctcccaa aaaactccgt tgggggaccc
2760
tggggctggg gttccaac
2778
```

```
<210> 4176
<211> 586
<212> PRT
<213> Homo sapiens
```

```
<400> 4176
Asn Ser Leu Thr Leu Glu Ala Val Lys Arg Leu Ile Ala Glu Gly Asn
 1               5                  10                  15
Lys Glu Glu Leu Arg Lys Cys Phe Gly Ala Arg Met Glu Phe Gly Thr
            20                  25                  30
Ala Gly Leu Arg Ala Ala Met Gly Pro Gly Ile Ser Arg Met Asn Asp
        35                  40                  45
Leu Thr Ile Ile Gln Thr Thr Gln Gly Phe Cys Arg Tyr Leu Glu Lys
    50                  55                  60
Gln Phe Ser Asp Leu Lys Gln Lys Gly Ile Val Ile Ser Phe Asp Ala
65                  70                  75                  80
Arg Ala His Pro Ser Ser Gly Gly Ser Ser Arg Arg Phe Ala Arg Leu
                85                  90                  95
Ala Ala Thr Thr Phe Ile Ser Gln Gly Ile Pro Val Tyr Leu Phe Ser
            100                 105                 110
Asp Ile Thr Pro Thr Pro Phe Val Pro Phe Thr Val Ser His Leu Lys
        115                 120                 125
Leu Cys Ala Gly Ile Met Ile Thr Ala Ser His Asn Pro Lys Gln Asp
    130                 135                 140
Asn Gly Tyr Lys Val Tyr Trp Asp Asn Gly Ala Gln Ile Ile Ser Pro
145                 150                 155                 160
His Asp Lys Gly Ile Ser Gln Ala Ile Glu Glu Asn Leu Glu Pro Trp
                165                 170                 175
Pro Gln Ala Trp Asp Asp Ser Leu Ile Asp Ser Ser Pro Leu Leu His
            180                 185                 190
Asn Pro Ser Ala Ser Ile Asn Asn Asp Tyr Phe Glu Asp Leu Lys Lys
        195                 200                 205
Tyr Cys Phe His Arg Ser Val Asn Arg Glu Thr Lys Val Lys Phe Val
    210                 215                 220
His Thr Ser Val His Gly Val Gly His Ser Phe Val Gln Ser Ala Phe
225                 230                 235                 240
Lys Ala Phe Xaa Pro Cys Ser Ser Xaa Glu Ala Val Pro Glu Gln Lys
```

```
                      245                    250                    255
Asp Pro Asp Pro Glu Phe Pro Thr Val Lys Tyr Pro Asn Pro Glu Glu
             260                    265                    270
Gly Lys Gly Val Leu Thr Leu Ser Phe Ala Leu Ala Asp Lys Thr Lys
             275                    280                    285
Ala Arg Ile Val Leu Ala Asn Asp Pro Asp Ala Asp Arg Leu Ala Val
             290                    295                    300
Ala Glu Lys Gln Asp Ser Gly Glu Trp Arg Val Phe Ser Gly Asn Glu
305                    310                    315                    320
Leu Gly Ala Leu Leu Gly Trp Trp Leu Phe Thr Ser Trp Lys Glu Lys
             325                    330                    335
Asn Gln Asp Arg Ser Ala Leu Lys Asp Thr Tyr Met Leu Ser Ser Thr
             340                    345                    350
Val Ser Ser Lys Ile Leu Arg Ala Ile Ala Leu Lys Glu Gly Phe His
             355                    360                    365
Phe Glu Glu Thr Leu Thr Gly Phe Lys Trp Met Gly Asn Arg Ala Lys
             370                    375                    380
Gln Leu Ile Asp Gln Gly Lys Thr Val Leu Phe Ala Phe Glu Glu Ala
385                    390                    395                    400
Ile Gly Tyr Met Cys Cys Pro Phe Val Leu Asp Lys Asp Gly Val Ser
             405                    410                    415
Ala Ala Val Ile Ser Ala Glu Leu Ala Ser Phe Leu Ala Thr Lys Asn
             420                    425                    430
Leu Ser Leu Ser Gln Gln Leu Lys Ala Ile Tyr Val Glu Tyr Gly Tyr
             435                    440                    445
His Ile Thr Lys Ala Ser Tyr Phe Ile Cys His Asp Gln Glu Thr Ile
450                    455                    460
Lys Lys Leu Phe Glu Asn Leu Arg Asn Tyr Asp Gly Lys Asn Asn Tyr
465                    470                    475                    480
Pro Lys Ala Cys Gly Lys Phe Glu Ile Ser Ala Ile Arg Asp Leu Thr
             485                    490                    495
Thr Gly Tyr Asp Asp Ser Gln Pro Asp Lys Lys Ala Val Leu Pro Thr
             500                    505                    510
Ser Lys Ser Ser Gln Met Ile Thr Phe Thr Phe Ala Asn Gly Gly Val
             515                    520                    525
Ala Thr Met Arg Thr Ser Gly Thr Glu Pro Lys Ile Lys Tyr Tyr Ala
             530                    535                    540
Glu Leu Cys Ala Pro Pro Gly Asn Ser Asp Pro Glu Gln Leu Lys Lys
545                    550                    555                    560
Glu Leu Asn Glu Leu Val Ser Ala Ile Glu Glu His Phe Phe Gln Pro
             565                    570                    575
Gln Lys Tyr Asn Leu Gln Pro Lys Ala Asp
             580                    585
```

<210> 4177
<211> 4763
<212> DNA
<213> Homo sapiens

<400> 4177
tttttttttt tttttttttt tttttttttt tttttttttt tttgaagcaa taaaagcaca
60
gatttattga agcaaaagta tattccacag agtgggagca ggctaaagca agctgctcaa
120

3365

```
gagccccagt tgcaaaatct ggggtttaag tacccttttag gggtttccta ttggttacac
180
cctatgcgcc accaatcgga ggccgaagtg aaggctccca gtctccagac tcttattctc
240
ctagctcaaa gaaatccact gatttcctct gtagcatctt caggttccat cttgacaact
300
tcctctaaat ccccagggga agagttgttt agagactcct ggatgccctg agggagcggc
360
tccagagctt gccttccctc ctctgttttc acaacggtcc agcgataggc actgttctct
420
gacaatcctt cttggcactg tttatcgact ggtggaggcc ctgggctatg ttccactttg
480
gggaaaacag tagcagagag aggagatagt tcctgggggct ctaatttggg ttctaggccc
540
tgaaaggcat tttcccatc agccacagca caagcaatgt ccacattcat gtgggcctta
600
tcttcagggg tggatggtat aggaagattc acagaattgc cagaaacaat taagggtgag
660
acagaggagg ccacaagggg ctggttcaat ggacagggga aggaagtagg gttaaccaag
720
agggtggcga tgggaatagt ctggggactc tgggccacag ccgcattgac aggctggatc
780
atgttacagc caccgccaag gctcacaatc ttcacagtgg tagcaggaac agtgaagata
840
acagatgcag ggtggataac aggggcaggt ttgatacagc gaaaggccct ggctccccttt
900
ctttttgagg gtctccgtct cacatatggc tttcgaaaca tggaagaggc aggggagggc
960
atcattacct tgggcacagg ggcagaagag agcaaagtct gggactcaga cagagggaag
1020
cttgtcctgg cctcagggggg catagcaggc agtgctgcag gagactcaaa actctcacct
1080
ccactgaccc ccagtggagg gacacctgga actgtctgta aaacagtggc tggctgtatt
1140
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1200
ggtgttttcc cagggttgaa gctgggctgg agagaggggc tgggttggat aaggaggggt
1260
ttcaggactg atgaacgctt ctgtctccaa gccttcttgg ggaaacggtc ggcaactggc
1320
ttcagtttca ggactacacc cttaggcaat agcagtgggt accgagtttc actccccaac
1380
tctgagttgt cttttttctag gcttcgatct gagttgatct cagtggttcc agtcatattt
1440
cctacctctc tagcaccatc agccatgtgc cgcagttctt cctggatgga tggcagactg
1500
gcctttaacc agaatgggag ccggtgttct tctctctcta taggtggctt ccactgatgt
1560
ggctggatct cttcacagca ttttcctagg actggcagct gtttggtctt cttataaaat
1620
ttaatgatgt tgtcaggagc tctgttcatg ttgaggttct tgattctcac tgtcagttgg
1680
cgggcagtct tgcaggttag aaggtacttg ctgattagag ggttaagaaa ctcagtccct
1740
```

```
tcaaaatgct tcagtcctaa agctaacaaa ttgtcctcag ccttggtgaa gaggatctta
1800
tcctggggat tctttgcctt cagggaacac actggaagta actctggata catgaaaacc
1860
ttgcttgtgg ccaggatcca agccacttgc tttggcaaac agggaaattc attggcagtc
1920
ttcttgacag ttttatgagg gctgcagtca atgctgacat gtgtgctgaa gtcttcaatc
1980
agctgcatag ctcccatcaa gttacagggt tggaacaggg tctgaaactt ggggttgtac
2040
tgatggtgaa gggcgatgga gctttgagca aaggttccca gctctttaag acatatcctg
2100
gtgctactgg cctccggatt gagattgggg ttgcaggtgg caagaaggtg gatttgtgtc
2160
aagagctgaa catgctgctg catctgctgc tggagtctct tcctttgtgc tgggtccaga
2220
atcagggtct gatgaacttc cttacactgg ggtttaacct tctctacttc cttctgctgt
2280
ttggctgaag gtttcttcat cttcagctgt tcaaatagtt ccttcgctat ctgatgttgt
2340
tcatttagta ggttggccag tagttcctca aaccgtagag cttgaggggt gttaaagtta
2400
gcttgaggct cagccacacg ctcctcctct tctgggccat catcttccat gttggagaat
2460
cccatctcat cttggaaagt ttcaaacaga tcttccatca gctcatttac ttccttttcg
2520
tgtcggaggc cgaggccgaa gccgagagcg atgagagtac agggaagtga ggaagagggg
2580
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2640
gcgccacggt ctcaggacgg gcgctttgga gccggcccca ggcagcgtgt gtcggtcgcc
2700
tagtctggag aactagtcct cgactcacgg tgagggaatg gaccgacacg ggtattgtac
2760
cgctgaggga aaggagcggg actccggacc tccaggagtg caaggatgat gctgaaagga
2820
ataacaaggc ttatctctag gatccataag ttggaccctg ggcgtttttt acacatgggg
2880
acccaggctc gccaaagcat tgctgctcac ctagataacc aggttccagt tgagagtccg
2940
agagctattt cccgcaccaa tgagaatgac ccggccaagc atggggatca gcacgagggt
3000
cagcactaca acatctcccc ccaggatttg gagactgtat ttccccatgg ccttcctcct
3060
cgctttgtga tgcaggtgaa gacattcagt gaagcttgcc tgatggtaag gaaaccagcc
3120
ctagaacttc tgcattacct gaaaaacacc agttttgctt atccagctat acgatatctt
3180
ctgtatggag agaagggaac aggaaaaacc ctaagtcttt gccatgtttt tcatttctgt
3240
gcaaaacagg actggctgat actacatatt ccagatgctc atctttgggt gaaaaattgt
3300
cgggatcttc tgcagtccag ctacaacaaa cagcgctttg atcaaccttt agaggcttca
3360
```

```
acctggctga agaatttcaa aactacaaat gagcgcttcc tgaaccagat aaaagttcaa
3420
gagaagtatg tctggaataa gagagaactc actgagaaag ggagtcctct gggagaagtg
3480
gttgaacagg gcataacacg ggtgaggaac gccacagatg cagttggaat tgtgctgaaa
3540
gagctaaaga ggcaaagttc tttgggtatg tttcacctcc tagtggccgt ggatggaatc
3600
aatgctcttt ggggaagaac cactctgaaa agagaagata aaagcccgat tgcccccgag
3660
gaattagcac ttgttcacaa cttgaggaaa atgatgaaaa atgattggca tggaggcgcc
3720
attgtgtcgg ctttgagcca gactgggtct ctctttaagc cccggaaagc ctatctgccc
3780
caggagttgc tggaaagga aggatttgat gccctggatc cctttattcc catcctggtt
3840
tccaactata acccaaagga atttgaaagt tgtattcagt attatttgga aaacaattgg
3900
cttcaacatg agaaagctcc tacagaagaa gggaaaaaag agctgctgtt cctaagtaac
3960
gcgaacccct cgctgctgga gcggcactgt gcctacctct aagccaagat cacagcatgt
4020
gaggaagaca gtggacatct gctttatgct ggacccagta agatgaggaa gtcgggcagt
4080
acacaggaag aggagccagg cccttgtacc tatgggattg dacaggactg cagttggctc
4140
tggacctgca ttaaaatggg tttcactgtg aatgcgtgac aataagatat tcccttgttc
4200
ctaaaacttt atatcagttt attggatgtg gtttttcaca tttaagataa ttatggctct
4260
tttcctaaaa aataaaatat ctttctaaag tgttgtgtta gattaataat atggaaggag
4320
tctttagatt ggccaaattg catttctctg atattcctct tgttgcaggt cagaagagat
4380
caattctaca gaaatttcca gtggttctgt tgaggcttta tggaattcag catgtcaaaa
4440
ttcacagctg gctgggcaca gtggctcatg cctgtaatcc cagcactttg gaagcccaag
4500
gcgggcagac tgcttgagtt caggagtttg caaccagcct gggcaacatg gtgaaaacct
4560
gtctctacta aaaatacaaa aattagccgg gcacgtgtgc atgcgcctgt agtccaagct
4620
acttgggagg ctgaggcagg agaattgctt caacttggga ggcggatgtt gcagtgagcc
4680
aaaattgcac cactgcactc cagcctgggc agcagagcaa gactccgtct caaaataaat
4740
aaataaataa ataaataaat aaa
4763

<210> 4178
<211> 398
<212> PRT
<213> Homo sapiens
```

```
<400> 4178
Met Met Leu Lys Gly Ile Thr Arg Leu Ile Ser Arg Ile His Lys Leu
1               5                   10                  15
Asp Pro Gly Arg Phe Leu His Met Gly Thr Gln Ala Arg Gln Ser Ile
            20                  25                  30
Ala Ala His Leu Asp Asn Gln Val Pro Val Glu Ser Pro Arg Ala Ile
        35                  40                  45
Ser Arg Thr Asn Glu Asn Asp Pro Ala Lys His Gly Asp Gln His Glu
    50                  55                  60
Gly Gln His Tyr Asn Ile Ser Pro Gln Asp Leu Glu Thr Val Phe Pro
65                  70                  75                  80
His Gly Leu Pro Pro Arg Phe Val Met Gln Val Lys Thr Phe Ser Glu
                85                  90                  95
Ala Cys Leu Met Val Arg Lys Pro Ala Leu Glu Leu Leu His Tyr Leu
            100                 105                 110
Lys Asn Thr Ser Phe Ala Tyr Pro Ala Ile Arg Tyr Leu Leu Tyr Gly
        115                 120                 125
Glu Lys Gly Thr Gly Lys Thr Leu Ser Leu Cys His Val Phe His Phe
    130                 135                 140
Cys Ala Lys Gln Asp Trp Leu Ile Leu His Ile Pro Asp Ala His Leu
145                 150                 155                 160
Trp Val Lys Asn Cys Arg Asp Leu Leu Gln Ser Ser Tyr Asn Lys Gln
                165                 170                 175
Arg Phe Asp Gln Pro Leu Glu Ala Ser Thr Trp Leu Lys Asn Phe Lys
            180                 185                 190
Thr Thr Asn Glu Arg Phe Leu Asn Gln Ile Lys Val Gln Glu Lys Tyr
        195                 200                 205
Val Trp Asn Lys Arg Glu Leu Thr Glu Lys Gly Ser Pro Leu Gly Glu
    210                 215                 220
Val Val Glu Gln Gly Ile Thr Arg Val Arg Asn Ala Thr Asp Ala Val
225                 230                 235                 240
Gly Ile Val Leu Lys Glu Leu Lys Arg Gln Ser Ser Leu Gly Met Phe
                245                 250                 255
His Leu Leu Val Ala Val Asp Gly Ile Asn Ala Leu Trp Gly Arg Thr
            260                 265                 270
Thr Leu Lys Arg Glu Asp Lys Ser Pro Ile Ala Pro Glu Glu Leu Ala
        275                 280                 285
Leu Val His Asn Leu Arg Lys Met Met Lys Asn Asp Trp His Gly Gly
    290                 295                 300
Ala Ile Val Ser Ala Leu Ser Gln Thr Gly Ser Leu Phe Lys Pro Arg
305                 310                 315                 320
Lys Ala Tyr Leu Pro Gln Glu Leu Leu Gly Lys Glu Gly Phe Asp Ala
                325                 330                 335
Leu Asp Pro Phe Ile Pro Ile Leu Val Ser Asn Tyr Asn Pro Lys Glu
            340                 345                 350
Phe Glu Ser Cys Ile Gln Tyr Tyr Leu Glu Asn Asn Trp Leu Gln His
        355                 360                 365
Glu Lys Ala Pro Thr Glu Glu Gly Lys Lys Glu Leu Leu Phe Leu Ser
    370                 375                 380
Asn Ala Asn Pro Ser Leu Leu Glu Arg His Cys Ala Tyr Leu
385                 390                 395
```

```
<210> 4179
<211> 2208
```

<212> DNA
<213> Homo sapiens

<400> 4179
tttttttttt ttttttttgg gaatgttagt gcaatttaat caccataagg gtgacttta
60
aagatacact gatagttaaa aaaaaaagac aattaaaaaa tagcatttg ttttttaaat
120
ggcacccatt aaagactcaa cagtcaaaat gagacaaatc agtcctttag acgttcacag
180
acaattgaaa ggcactttaa aaatccactt tttaaactac cacttgagaa cacatggtag
240
cacagtctta aattcatcct agttgatcgg gaatgatgaa tgagtgttgg caccagaaaa
300
tcctgcttgc agaagggggc gcaggtgtcg gtccacggga cagccactgg ccaggctagc
360
tgccgcctca ctccgcagcc ttctgtggct aaatggcagg acggacacac aggaatgggc
420
tttggaccac aagctctggc atatcgggag gcaaagcact caagtactct gcagtctaga
480
tgacacattt catggtttgg aggacagaag taggtttcca catcacatga aaaggacagt
540
gtcacagtgg ggttacccag taaacagcta ccaaagccat catttcacgc ttccctgtag
600
ttttatgagc tcgccctctg catgtggata tggggaaagc cgggcatgaa ggggtgtgtg
660
aaaaagaaca gcctctgtga ctgactgcag taagctcaca agtttgtcac tgtcagactt
720
agcaagtcag cctgcaaagg ttgtgctgat ctcttggcca cactacctac tcaggttccc
780
atccatgcct cctgcctgcc cccaccccca gccccaccag tgagacttct gattggaagt
840
ctatagacat aagaattcaa ctctgaccca tggatgagag gatgaggcaa agaaccaatg
900
ggttatctag taaacgatca ataactacct acccacaatg attgtcccag gccaatgtca
960
caagacgaca ttacttccaa gaaccaagtc atcccttgct tctgcgggcc cagtgccacg
1020
ggtactgtcc tgagtggttt ggaaggtggg tagccgctga tacagggaca ggcagatgtg
1080
cagacactta ccaccctggt ccaccgatcc caccccatgc ttccacctcc cagagctctt
1140
gagataagac cttaagaagg atccttgggc ttgcattaaa accactttgc tgtccgtgga
1200
ggtctgacag gacccaatag ttgttactac aaaagtgctt ttgcaaatag ggcaagttag
1260
aagaaggagg taatatgaat attctttaga aaaactcaaa tccatcggct tatcaatacc
1320
caaagtctga ggctacccag ggcacaattt ggtccatgga atgctgagtg gaggaggcag
1380
ctggtgtgag gctgcgcctg actcccagga gcatttagcc atccttttg gcttggggag
1440
tgtcaaagag ccggactgcc ttcctgcaca gcagacagaa ccagtagatc tgaggagcta
1500

3370

cgaggaaggc attggccacg ttgcagtaga atgggatgct gaagggtact tggagcaggc
1560
ttagtccctg ctggcggcca taggaccagt acatgaaggg gaagagaagg atccggcagg
1620
aaaggaaggt ggccagcgtg aggattccat tcaccttgta cagaagggtg tgctgctgct
1680
ttagctgaat cagaaccctg cccagcgaca caaacggagt gctcagttct gccgtgaaga
1740
tgcagccgac aaagaagtcc ccaaggtctc cccggagcct ctgtgcgact ggcacaagga
1800
caaagagaat gaccgcatga tgtgtgatca tgaggcggtt tcgacttagg aagtttcgaa
1860
gagtgaggga gggcgcacgg ttctggtctc tggttcggca ccattcacag aggtacatgg
1920
cgtacgagtc atagatcatg tatggaatca gaaaccacac atattcccgg gcaagccagt
1980
gcctgccggt gatcacgtcg tcgcaggagc gaatgatgac gatccccgag ccggtggcca
2040
gcacggcgtg caccgaggaa accagcctgg tgctgatcat cacgcagtcg gtgcggctcc
2100
atccgggctg ggagcggcgc agcgcccagg tgcagagcgc gaagagcccc gggaagaaga
2160
gcgcgccccc ggccagcgtc agcagcatcg gggctgcggg tccggccg
2208

<210> 4180
<211> 257
<212> PRT
<213> Homo sapiens

<400> 4180
Met Leu Leu Thr Leu Ala Gly Gly Ala Leu Phe Phe Pro Gly Leu Phe
1   5   10   15
Ala Leu Cys Thr Trp Ala Leu Arg Arg Ser Gln Pro Gly Trp Ser Arg
            20   25   30
Thr Asp Cys Val Met Ile Ser Thr Arg Leu Val Ser Ser Val His Ala
        35   40   45
Val Leu Ala Thr Gly Ser Gly Ile Val Ile Ile Arg Ser Cys Asp Asp
    50   55   60
Val Ile Thr Gly Arg His Trp Leu Ala Arg Glu Tyr Val Trp Phe Leu
65   70   75   80
Ile Pro Tyr Met Ile Tyr Asp Ser Tyr Ala Met Tyr Leu Cys Glu Trp
                85   90   95
Cys Arg Thr Arg Asp Gln Asn Arg Ala Pro Ser Leu Thr Leu Arg Asn
            100   105   110
Phe Leu Ser Arg Asn Arg Leu Met Ile Thr His His Ala Val Ile Leu
        115   120   125
Phe Val Leu Val Pro Val Ala Gln Arg Leu Arg Gly Asp Leu Gly Asp
    130   135   140
Phe Phe Val Gly Cys Ile Phe Thr Ala Glu Leu Ser Thr Pro Phe Val
145   150   155   160
Ser Leu Gly Arg Val Leu Ile Gln Leu Lys Gln Gln His Thr Leu Leu
                165   170   175
Tyr Lys Val Asn Gly Ile Leu Thr Leu Ala Thr Phe Leu Ser Cys Arg

```
            180                     185                     190
Ile Leu Leu Phe Pro Phe Met Tyr Trp Ser Tyr Gly Arg Gln Gln Gly
        195                     200                     205
Leu Ser Leu Leu Gln Val Pro Phe Ser Ile Pro Phe Tyr Cys Asn Val
    210                     215                     220
Ala Asn Ala Phe Leu Val Ala Pro Gln Ile Tyr Trp Phe Cys Leu Leu
225                     230                     235                     240
Cys Arg Lys Ala Val Arg Leu Phe Asp Thr Pro Gln Ala Lys Lys Asp
                245                     250                     255
Gly
```

```
<210> 4181
<211> 735
<212> DNA
<213> Homo sapiens

<400> 4181
nagtccggcc ttgttgtcac gcgtgcattt gggtggctgc atgggcacac gcctgtgagg
60
ccagggccgg ccgggtcttc ggttctctgg cttggctcag gcagcagttc ctgcagactt
120
ttctcactgc tgttcagcaa tatgtctcct ttaaaatagc acccggcggg gatagagttc
180
tctctgtgtc tgctgtttgc caagctggtc agttacacct tcctctactg gctgcccctg
240
tacatcgcca atgtggctca ctttagtgcc aaggaggctg gggacctgtc tacactcttc
300
gatgttggtg gcatcatagg cggcatcgtg gcaggctcg tctctgacta caccaatggc
360
agggccacca cttgctgtgt catgctcatc ttggctgccc ccatgatgtt cctgtacaac
420
tacattggcc aggacgggat tgccagctcc atagtgatgc tgatcatctg tggggggcctg
480
gtcaatggcc catacgccnt catcaccact gctgtctctg ctgacctggg gactcacaag
540
agcctgaagg gcaacgccaa agccctgtcc acggtcacgg ccatcattga cggcaccggc
600
tccataggtg cggctctggg gcctctgctg gctgggctca tctcccccac gggctggaac
660
aatgtcttct acatgctcat ctctgccgac gtcctagcct gcttgctcct ttgccggtta
720
gtatacaaag agatc
735
```

```
<210> 4182
<211> 192
<212> PRT
<213> Homo sapiens

<400> 4182
His Pro Ala Gly Ile Glu Phe Ser Leu Cys Leu Leu Phe Ala Lys Leu
 1               5                   10                  15
Val Ser Tyr Thr Phe Leu Tyr Trp Leu Pro Leu Tyr Ile Ala Asn Val
```

```
                    20                      25                      30
Ala His Phe Ser Ala Lys Glu Ala Gly Asp Leu Ser Thr Leu Phe Asp
            35                      40                      45
Val Gly Gly Ile Ile Gly Gly Ile Val Ala Gly Leu Val Ser Asp Tyr
        50                      55                      60
Thr Asn Gly Arg Ala Thr Thr Cys Cys Val Met Leu Ile Leu Ala Ala
65                      70                      75                      80
Pro Met Met Phe Leu Tyr Asn Tyr Ile Gly Gln Asp Gly Ile Ala Ser
                    85                      90                      95
Ser Ile Val Met Leu Ile Ile Cys Gly Gly Leu Val Asn Gly Pro Tyr
                    100                     105                     110
Ala Xaa Ile Thr Thr Ala Val Ser Ala Asp Leu Gly Thr His Lys Ser
            115                     120                     125
Leu Lys Gly Asn Ala Lys Ala Leu Ser Thr Val Thr Ala Ile Ile Asp
        130                     135                     140
Gly Thr Gly Ser Ile Gly Ala Ala Leu Gly Pro Leu Leu Ala Gly Leu
145                     150                     155                     160
Ile Ser Pro Thr Gly Trp Asn Asn Val Phe Tyr Met Leu Ile Ser Ala
                    165                     170                     175
Asp Val Leu Ala Cys Leu Leu Leu Cys Arg Leu Val Tyr Lys Glu Ile
            180                     185                     190
```

<210> 4183
<211> 1129
<212> DNA
<213> Homo sapiens

<400> 4183
ttttttttttt ttcaaaggct tatctttatc ttgaacttct tttgagaagc gctcccttttc
60
aatagctgat tctctctcta ttcgctcaat ttcagccaat gcatccaatt ccacttcatc
120
atatataggt ccctgttgtg atatctgttg ttgattctgt accacagaag tctggggttg
180
ttttgtagca actgaagtgt tctgttgtaa aacaggcact tgatttgctg gaaggaatgc
240
tgtttgttct tgctgcgaca aacattgagc agcattaagt gggcggttta cgtcctgtgg
300
agtaatgggt gttttttgaag tctgtccttg atactgcaca ttaaaaggaa tatcattttc
360
tgaaacattg ctattttcca taccagatag catatcctct tgctggtcca tatccgaaga
420
ccttacacga gaaagtctta atgtaagttt agtagagtcc ttggatggag aactaattat
480
atcatacatt gccgctttct cactctgctc tttttcatcc ttgcctaatt tcattttctt
540
ctgcttcttt tgttttcttt ctggagaatc tagcaagata tctggtggaa catctcgagg
600
tgatgaacaa ggtagagact gagattgtag gattaaaggt ggtcttgagc ctttaggagt
660
tccttcactt ccagcagggg agcatactgg ctgtggagat ctcaagggaa aagatgcagc
720
attcctcatt gttgaagaat ctccatcgtc actacttagc ctgtgcacca tgtgtaggta
780
```

```
gtcctcactt gaaccatgtc taggattatc agcatgatga ttagctgaat tgccagacaa
840
cggaccagaa actttattat catgtatgtt tctcaaacca cctgcaacaa tgggacttga
900
taccgatgct tgttgcatct gtggatgtgt tgtgtaactt gaaggatggg aatatggcat
960
gtatcctgca gggctttgtg gggcgtatgg actaggcact gggctatttt gctgtggcat
1020
aaatctgttc ccagagcttg tctgtggtgg cacaaaccgg ctggaggggc tatgtgagat
1080
agtggtttgt tgataattgg aagatgcagg actactgtgc atggaattc
1129


<210> 4184
<211> 374
<212> PRT
<213> Homo sapiens

<400> 4184
Met His Ser Ser Pro Ala Ser Ser Asn Tyr Gln Gln Thr Thr Ile Ser
 1               5                  10                  15
His Ser Pro Ser Ser Arg Phe Val Pro Pro Gln Thr Ser Ser Gly Asn
            20                  25                  30
Arg Phe Met Pro Gln Gln Asn Ser Pro Val Pro Ser Pro Tyr Ala Pro
        35                  40                  45
Gln Ser Pro Ala Gly Tyr Met Pro Tyr Ser His Pro Ser Ser Tyr Thr
    50                  55                  60
Thr His Pro Gln Met Gln Gln Ala Ser Val Ser Ser Pro Ile Val Ala
65                  70                  75                  80
Gly Gly Leu Arg Asn Ile His Asp Asn Lys Val Ser Gly Pro Leu Ser
                85                  90                  95
Gly Asn Ser Ala Asn His His Ala Asp Asn Pro Arg His Gly Ser Ser
            100                 105                 110
Glu Asp Tyr Leu His Met Val His Arg Leu Ser Ser Asp Asp Gly Asp
        115                 120                 125
Ser Ser Thr Met Arg Asn Ala Ala Ser Phe Pro Leu Arg Ser Pro Gln
    130                 135                 140
Pro Val Cys Ser Pro Ala Gly Ser Glu Gly Thr Pro Lys Gly Ser Arg
145                 150                 155                 160
Pro Pro Leu Ile Leu Gln Ser Gln Ser Leu Pro Cys Ser Ser Pro Arg
                165                 170                 175
Asp Val Pro Pro Asp Ile Leu Leu Asp Ser Pro Glu Arg Lys Gln Lys
            180                 185                 190
Lys Gln Lys Lys Met Lys Leu Gly Lys Asp Glu Lys Glu Gln Ser Glu
        195                 200                 205
Lys Ala Ala Met Tyr Asp Ile Ile Ser Ser Pro Ser Lys Asp Ser Thr
    210                 215                 220
Lys Leu Thr Leu Arg Leu Ser Arg Val Arg Ser Ser Asp Met Asp Gln
225                 230                 235                 240
Gln Glu Asp Met Leu Ser Gly Met Glu Asn Ser Asn Val Ser Glu Asn
                245                 250                 255
Asp Ile Pro Phe Asn Val Gln Tyr Gln Gly Gln Thr Ser Lys Thr Pro
            260                 265                 270
Ile Thr Pro Gln Asp Val Asn Arg Pro Leu Asn Ala Ala Gln Cys Leu
```

3374

```
       275                    280                    285
Ser Gln Gln Glu Gln Thr Ala Phe Leu Pro Ala Asn Gln Val Pro Val
   290                    295                    300
Leu Gln Gln Asn Thr Ser Val Ala Thr Lys Gln Pro Gln Thr Ser Val
305                    310                    315                    320
Val Gln Asn Gln Gln Gln Ile Ser Gln Gln Gly Pro Ile Tyr Asp Glu
               325                    330                    335
Val Glu Leu Asp Ala Leu Ala Glu Ile Glu Arg Ile Glu Arg Glu Ser
           340                    345                    350
Ala Ile Glu Arg Glu Arg Phe Ser Lys Glu Val Gln Asp Lys Asp Lys
       355                    360                    365
Pro Leu Lys Lys Lys Lys
   370
```

```
<210> 4185
<211> 1481
<212> DNA
<213> Homo sapiens
```

```
<400> 4185
ntggtgttta agagtttgga caaaaagaat gatggacgca ttgacgcgca ggagatcatg     60

cagtccctgc gggacttggg agtcaagata tctgaacagc aggcagaaaa aattctcaag    120

agcatggata aaaacggcac gatgaccatc gactggaacg agtggagaga ctaccacctc    180

ctccaccccg tggaaaacat ccccgagatc atcctctact ggaagcattc cacgatcttt    240

gatgtgggtg agaatctaac ggtcccggat gagttcacag tggaggagag gcagacgggg    300

atgtggtgga gacacctggt ggcaggaggt ggggcagggg ccgtatccag aacctgcacg    360

gcccccctgg acaggctcaa ggtgctcatg caggtccatg cctcccgcag caacaacatg    420

ggcatcgttg gtggcttcac tcagatgatt cgagaaggag gggccaggtc actctggcgg    480

ggcaatggca tcaacgtcct caaaattgcc cccgaatcag ccatcaaatt catggcctat    540

gagcagatca gcgccttgt tggtagtgac caggagactc tgaggattca cgagaggctt    600

gtggcagggt ccttggcagg ggccatcgcc cagagcagca tctacccaat ggaggtcctg    660

aagacccgga tggcgctgcg gaagacaggc cagtactcag gaatgctgga ctgcgccagg    720

aggatcctgg ccagagaggg ggtggccgcc ttctacaaag gctatgtccc caacatgctg    780

ggcatcatcc cctatgccgg catcgacctt gcagtctacg agacgctcaa gaatgcctgg    840

ctgcagcact atgcagtgaa cagcgcggac cccggcgtgt tgtgctcct ggcctgtggc    900

accatgtcca gtacctgtgg ccagctggcc agctacccc tggccctagt caggacccgg    960

atgcaggcgc aagcctctat tgagggcgct ccggaggtga ccatgagcag cctcttcaaa   1020
```

catatcctgc ggaccgaggg ggccttcggg ctgtacaggg ggctggcccc caacttcatg
1080
aaggtcatcc cagctgtgag catcagctac gtggtctacg agaacctgaa gatcaccctg
1140
ggcgtgcagt cgcggtgacg gggggagggc cgcccggcag tggactcgct gatcctgggc
1200
cgcagcctgg ggtgtgcagc catctcattc tgtgaatgtg ccaacactaa gctgtctcga
1260
gccaagctgt gaaaaccta gacgcacccg cagggagggt ggggagagct ggcaggccca
1320
gggcttgtcc tgctgacccc agcagaccct cctgttggtt ccagcgaaga ccacaggcat
1380
tccttagggt ccagggtcag caggctccgg gctcacatgt gtaaggacag gacattttct
1440
gcagtgcctg ccaatagtga gcttggagcc tggaggccgg c
1481

<210> 4186
<211> 385
<212> PRT
<213> Homo sapiens

<400> 4186
Xaa Val Phe Lys Ser Leu Asp Lys Lys Asn Asp Gly Arg Ile Asp Ala
1   5   10   15
Gln Glu Ile Met Gln Ser Leu Arg Asp Leu Gly Val Lys Ile Ser Glu
            20   25   30
Gln Gln Ala Glu Lys Ile Leu Lys Ser Met Asp Lys Asn Gly Thr Met
            35   40   45
Thr Ile Asp Trp Asn Glu Trp Arg Asp Tyr His Leu Leu His Pro Val
        50   55   60
Glu Asn Ile Pro Glu Ile Ile Leu Tyr Trp Lys His Ser Thr Ile Phe
65   70   75   80
Asp Val Gly Glu Asn Leu Thr Val Pro Asp Glu Phe Thr Val Glu Glu
                85   90   95
Arg Gln Thr Gly Met Trp Trp Arg His Leu Val Ala Gly Gly Gly Ala
            100   105   110
Gly Ala Val Ser Arg Thr Cys Thr Ala Pro Leu Asp Arg Leu Lys Val
            115   120   125
Leu Met Gln Val His Ala Ser Arg Ser Asn Asn Met Gly Ile Val Gly
        130   135   140
Gly Phe Thr Gln Met Ile Arg Glu Gly Gly Ala Arg Ser Leu Trp Arg
145   150   155   160
Gly Asn Gly Ile Asn Val Leu Lys Ile Ala Pro Glu Ser Ala Ile Lys
                165   170   175
Phe Met Ala Tyr Glu Gln Ile Lys Arg Leu Val Gly Ser Asp Gln Glu
            180   185   190
Thr Leu Arg Ile His Glu Arg Leu Val Ala Gly Ser Leu Ala Gly Ala
        195   200   205
Ile Ala Gln Ser Ser Ile Tyr Pro Met Glu Val Leu Lys Thr Arg Met
        210   215   220
Ala Leu Arg Lys Thr Gly Gln Tyr Ser Gly Met Leu Asp Cys Ala Arg
225   230   235   240
Arg Ile Leu Ala Arg Glu Gly Val Ala Ala Phe Tyr Lys Gly Tyr Val

```
                    245                    250                    255
Pro Asn Met Leu Gly Ile Ile Pro Tyr Ala Gly Ile Asp Leu Ala Val
            260                    265                    270
Tyr Glu Thr Leu Lys Asn Ala Trp Leu Gln His Tyr Ala Val Asn Ser
            275                    280                    285
Ala Asp Pro Gly Val Phe Val Leu Leu Ala Cys Gly Thr Met Ser Ser
            290                    295                    300
Thr Cys Gly Gln Leu Ala Ser Tyr Pro Leu Ala Leu Val Arg Thr Arg
305                    310                    315                    320
Met Gln Ala Gln Ala Ser Ile Glu Gly Ala Pro Glu Val Thr Met Ser
                    325                    330                    335
Ser Leu Phe Lys His Ile Leu Arg Thr Glu Gly Ala Phe Gly Leu Tyr
            340                    345                    350
Arg Gly Leu Ala Pro Asn Phe Met Lys Val Ile Pro Ala Val Ser Ile
            355                    360                    365
Ser Tyr Val Val Tyr Glu Asn Leu Lys Ile Thr Leu Gly Val Gln Ser
    370                    375                    380
Arg
385


<210> 4187
<211> 1087
<212> DNA
<213> Homo sapiens

<400> 4187
ntggccattg accgagcctg cccagaaagc gcttctctcc ttggtcaccc tcgagtcctg
60
gctgattctt ttcctgacag ttccccttat gagggttaca actatggctc ctttgagaat
120
gtttctggat ctaccgatgg tctggttgac agcgctggca ctggggacct ctcttacggt
180
taccagggcc gctcctttga acctgtaggt actcggcccc gagtggactc catgagctct
240
gtggaggagg atgactacga cacattgacc gacatcgatt ccgacaagaa tgtcattcgc
300
accaagcaat acctctatgt ggctgacctg gcacggaagg acaagcgtgt tctgcggaaa
360
aagtaccaga tctacttctg gaacattgcc accattgctg tcttctatgc ccttcctgtg
420
gtgcagctgg tgatcaccta cccagaggnn ggnggatgta cnaggggatc nagggacatc
480
tgctcntcna acttcctctg cgcccaccca ctgggcaatc tcagcgcctt caacaacatc
540
ctcagcaacc tggggtacat cctgctgggg ctgcttttcc tgctcatcat cctgcaacgg
600
gagatcaacc acaaccgggc cctgctgcgc aatgacctct gtgccctgga atgtgggatc
660
cccaaacact ttgggctttt ctacgccatg ggcacagccc tgatgatgga ggggctgctc
720
agtgcttgct atcatgtgtg ccccaactat accaatttcc agtttggtga gtggggcgtc
780
cttcttttct ggctcaacct acagcaggga cctgcctgag tccttcacta tccccaagtc
840
```

```
acccacaggg atcgctaaga caccCctgta ggaaactCca aggctggcgt gcctgggtgt
900
gcacacatcc tagcctatgg aacatgggca cctagatgct gcttcattca tctgtcaagc
960
tattcctatg taaaggcatg tgccgcagtg aagaaacag tataattaag aaggggtccc
1020
tggccgggtg cagtggctca cgcctgtaat cccagcactt tgggaggcag aggcgggtgg
1080
atcatga
1087
```

```
<210> 4188
<211> 272
<212> PRT
<213> Homo sapiens
```

```
<400> 4188
Xaa Ala Ile Asp Arg Ala Cys Pro Glu Ser Ala Ser Leu Leu Gly His
  1               5                  10                  15
Pro Arg Val Leu Ala Asp Ser Phe Pro Asp Ser Ser Pro Tyr Glu Gly
               20                  25                  30
Tyr Asn Tyr Gly Ser Phe Glu Asn Val Ser Gly Ser Thr Asp Gly Leu
            35                  40                  45
Val Asp Ser Ala Gly Thr Gly Asp Leu Ser Tyr Gly Tyr Gln Gly Arg
     50                  55                  60
Ser Phe Glu Pro Val Gly Thr Arg Pro Arg Val Asp Ser Met Ser Ser
65                  70                  75                  80
Val Glu Glu Asp Asp Tyr Asp Thr Leu Thr Asp Ile Asp Ser Asp Lys
                  85                  90                  95
Asn Val Ile Arg Thr Lys Gln Tyr Leu Tyr Val Ala Asp Leu Ala Arg
               100                 105                 110
Lys Asp Lys Arg Val Leu Arg Lys Lys Tyr Gln Ile Tyr Phe Trp Asn
            115                 120                 125
Ile Ala Thr Ile Ala Val Phe Tyr Ala Leu Pro Val Val Gln Leu Val
         130                 135                 140
Ile Thr Tyr Pro Glu Xaa Gly Gly Cys Thr Arg Gly Ser Arg Asp Ile
145                 150                 155                 160
Cys Ser Ser Asn Phe Leu Cys Ala His Pro Leu Gly Asn Leu Ser Ala
                  165                 170                 175
Phe Asn Asn Ile Leu Ser Asn Leu Gly Tyr Ile Leu Leu Gly Leu Leu
               180                 185                 190
Phe Leu Leu Ile Ile Leu Gln Arg Glu Ile Asn His Asn Arg Ala Leu
            195                 200                 205
Leu Arg Asn Asp Leu Cys Ala Leu Glu Cys Gly Ile Pro Lys His Phe
         210                 215                 220
Gly Leu Phe Tyr Ala Met Gly Thr Ala Leu Met Met Glu Gly Leu Leu
225                 230                 235                 240
Ser Ala Cys Tyr His Val Cys Pro Asn Tyr Thr Asn Phe Gln Phe Gly
                  245                 250                 255
Glu Trp Gly Val Leu Leu Phe Trp Leu Asn Leu Gln Gln Gly Pro Ala
               260                 265                 270
```

```
<210> 4189
<211> 1570
```

<212> DNA
<213> Homo sapiens

<400> 4189
agatctattc gatcttttgc taatgatgat cgccatgtta tggtgaaaca ttcaacaatc
60
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3379

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1570

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<211> 523
<212> PRT
<213> Homo sapiens

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Met Val Ser Thr Val Glu Cys Ala Leu Lys His Val Ser Asp Trp Leu
            35   40   45
Asp Glu Thr Asn Lys Gly Thr Lys Thr Glu Gly Glu Thr Glu Val Lys
        50   55   60
Lys Asp Glu Ala Gly Glu Asn Tyr Ser Lys Asp Gln Gly Gly Arg Thr
65   70   75   80
Leu Cys Gly Val Met Arg Ile Gly Leu Val Ala Lys Gly Leu Leu Ile
                85   90   95
Lys Asp Asp Met Asp Leu Glu Leu Val Leu Met Cys Lys Asp Lys Pro
            100   105   110
Thr Glu Thr Leu Leu Asn Thr Val Lys Asp Asn Leu Pro Ile Gln Ile
            115   120   125
Gln Lys Leu Thr Glu Glu Lys Tyr Gln Val Glu Gln Cys Val Asn Glu
        130   135   140
Ala Ser Ile Ile Ile Arg Asn Thr Lys Glu Pro Thr Leu Thr Leu Lys
145   150   155   160
Val Ile Leu Thr Ser Pro Leu Ile Arg Asp Glu Leu Glu Lys Lys Asp
                165   170   175
Gly Glu Asn Val Ser Met Lys Asp Pro Pro Asp Leu Leu Asp Arg Gln
            180   185   190
Lys Cys Leu Asn Ala Leu Ala Ser Leu Arg His Ala Lys Trp Phe Gln
        195   200   205
Ala Arg Ala Asn Gly Leu Lys Ser Cys Val Ile Val Leu Arg Ile Leu
        210   215   220
Arg Asp Leu Cys Asn Arg Val Pro Thr Trp Ala Pro Leu Lys Gly Trp
225   230   235   240
Pro Leu Glu Leu Ile Cys Glu Lys Ser Ile Gly Thr Cys Asn Arg Pro
                245   250   255
Leu Gly Ala Gly Glu Ala Leu Arg Arg Val Met Glu Cys Leu Ala Ser
            260   265   270
Gly Ile Leu Leu Pro Gly Gly Pro Gly Leu His Asp Pro Cys Glu Arg
            275   280   285
Asp Pro Thr Asp Ala Leu Ser Tyr Met Thr Ile Gln Gln Lys Glu Asp
        290   295   300
Ile Thr His Ser Ala Gln His Ala Leu Arg Leu Ser Ala Phe Gly Gln
305   310   315   320
Ile Tyr Lys Val Leu Glu Met Asp Pro Leu Pro Ser Ser Lys Pro Phe
                325   330   335
Gln Lys Tyr Ser Trp Ser Val Thr Asp Lys Glu Gly Ala Gly Ser Ser

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                        340                    345                    350
Ala Leu Lys Arg Pro Phe Glu Asp Gly Leu Gly Asp Asp Lys Asp Pro
                355                    360                    365
Asn Lys Lys Met Lys Arg Asn Leu Arg Lys Ile Leu Asp Ser Lys Ala
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Ile Asp Leu Met Asn Ala Leu Met Arg Leu Asn Gln Ile Arg Pro Gly
385                    390                    395                    400
Leu Gln Tyr Lys Leu Leu Ser Gln Ser Gly Pro Val His Ala Pro Val
                405                    410                    415
Phe Thr Met Ser Val Asp Val Asp Gly Thr Thr Tyr Glu Ala Ser Gly
                420                    425                    430
Pro Ser Lys Lys Thr Ala Lys Leu His Val Ala Val Lys Val Leu Gln
            435                    440                    445
Ala Met Gly Tyr Pro Thr Gly Phe Asp Ala Asp Ile Glu Cys Met Ser
        450                    455                    460
Ser Asp Glu Lys Arg Arg Gly Leu Lys Tyr Glu Leu Ile Ser Glu Thr
465                    470                    475                    480
Gly Gly Ser His Asp Lys Arg Phe Val Met Glu Val Glu Val Asp Gly
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Gln Lys Phe Arg Gly Ala Gly Pro Asn Lys Lys Val Ala Lys Ala Ser
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Ala Ala Leu Leu Ala Xaa Gly Glu Thr Val Phe
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<210> 4191
<211> 1661
<212> DNA
<213> Homo sapiens

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720
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3381

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1661
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<210> 4192
<211> 517
<212> PRT
<213> Homo sapiens
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<400> 4192
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Gly Pro Leu Gln Asp Glu Thr Leu Gly Val Ala Ser Val Pro Ser Gln
                20                  25                  30
Trp Arg Ala Val Gln Gly Ile Arg Gly Glu Thr Lys Ser Cys Gln Thr
        35                  40                  45
Ala Ser Ile Ala Thr Ala Ser Ala Ser Ala Gln Ala Arg Asn His Val
    50                  55                  60
Asp Ala Gln Val Gln Thr Glu Ala Pro Val Pro Val Ser Val Gln Pro
65                  70                  75                  80
Pro Ser Gln Tyr Asp Ile Pro Arg Leu Ala Ala Phe Leu Arg Arg Val
                85                  90                  95
Glu Ala Met Val Ile Arg Glu Leu Asn Lys Asn Trp Gln Ser His Ala
            100                 105                 110
Phe Asp Gly Phe Glu Val Asn Trp Thr Glu Gln Gln Gln Met Val Ser
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3382

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Cys Leu Tyr Thr Leu Gly Tyr Pro Pro Ala Gln Ala Gln Gly Leu His
    130                   135                   140
Val Thr Ser Ile Ser Trp Asn Ser Thr Gly Ser Val Val Ala Cys Ala
145                   150                   155                   160
Tyr Gly Arg Leu Asp His Gly Asp Trp Ser Thr Leu Lys Ser Phe Val
                165                   170                   175
Cys Ala Trp Asn Leu Asp Arg Arg Asp Leu Arg Pro Gln Gln Pro Ser
                180                   185                   190
Ala Val Val Glu Val Pro Ser Ala Val Leu Cys Leu Ala Phe His Pro
    195                   200                   205
Thr Gln Pro Ser His Val Ala Gly Gly Leu Tyr Ser Gly Glu Val Leu
    210                   215                   220
Val Trp Asp Leu Ser Arg Leu Glu Asp Pro Leu Leu Trp Arg Thr Gly
225                   230                   235                   240
Leu Thr Asp Asp Thr His Thr Asp Pro Val Ser Gln Val Val Trp Leu
                245                   250                   255
Pro Glu Pro Gly His Ser His Arg Phe Gln Val Leu Ser Val Ala Thr
                260                   265                   270
Asp Gly Lys Val Leu Leu Trp Gln Gly Ile Gly Val Gly Gln Leu Gln
    275                   280                   285
Leu Thr Glu Gly Phe Ala Leu Val Met Gln Gln Leu Pro Arg Ser Thr
    290                   295                   300
Lys Leu Lys Lys His Pro Arg Gly Glu Thr Glu Val Gly Ala Thr Ala
305                   310                   315                   320
Val Ala Phe Ser Ser Phe Asp Pro Arg Leu Phe Ile Leu Gly Thr Glu
                325                   330                   335
Gly Gly Phe Pro Leu Lys Cys Ser Leu Ala Ala Gly Glu Ala Ala Leu
                340                   345                   350
Thr Arg Met Pro Ser Ser Val Pro Leu Arg Ala Pro Ala Gln Phe Thr
    355                   360                   365
Phe Ser Pro His Gly Gly Pro Ile Tyr Ser Val Ser Cys Ser Pro Phe
    370                   375                   380
His Arg Asn Leu Phe Leu Ser Ala Gly Thr Asp Gly His Val His Leu
385                   390                   395                   400
Tyr Ser Met Leu Gln Ala Pro Pro Leu Thr Ser Leu Gln Leu Ser Leu
                405                   410                   415
Lys Tyr Leu Phe Ala Val Arg Trp Ser Pro Val Arg Pro Leu Val Phe
                420                   425                   430
Ala Ala Ala Ser Gly Lys Gly Asp Val Gln Leu Phe Asp Leu Gln Lys
    435                   440                   445
Ser Ser Gln Lys Pro Thr Val Leu Ile Lys Gln Thr Gln Asp Glu Ser
    450                   455                   460
Pro Val Tyr Cys Leu Glu Phe Asn Ser Gln Gln Thr Gln Leu Leu Ala
465                   470                   475                   480
Ala Gly Asp Ala Gln Gly Thr Val Lys Val Trp Gln Leu Ser Thr Glu
                485                   490                   495
Phe Thr Glu Gln Gly Pro Arg Glu Ala Glu Asp Leu Asp Cys Leu Ala
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Ala Glu Val Ala Ala
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<211> 6439
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<212> DNA
<213> Homo sapiens

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3385

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4740
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6300
aaaatttctg atcccatttc tgatggatgt gtcacacctt ttctgtcaaa ataaaatgtc
6360
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3387

ttggaggtta tgactccttg gtgaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa
6420
aaaaaaaaaa aaaaaaaaa
6439

<210> 4194
<211> 519
<212> PRT
<213> Homo sapiens

<400> 4194
Met Asp Ala Asp Glu Gly Gln Asp Met Ser Gln Val Ser Gly Lys Glu
1   5   10   15
Ser Pro Pro Val Ser Asp Thr Pro Asp Glu Gly Asp Glu Pro Met Pro
20   25   30
Ile Pro Glu Asp Leu Ser Thr Thr Ser Gly Gly Gln Gln Ser Ser Lys
        35   40   45
Ser Asp Arg Val Val Ala Ser Asn Val Lys Val Glu Thr Gln Ser Asp
    50   55   60
Glu Glu Asn Gly Arg Ala Cys Glu Met Asn Gly Glu Glu Cys Ala Glu
65   70   75   80
Asp Leu Arg Met Leu Asp Ala Ser Gly Glu Lys Met Asn Gly Ser His
            85   90   95
Arg Asp Gln Gly Ser Ser Ala Leu Ser Gly Val Gly Gly Ile Arg Leu
                100   105   110
Pro Asn Gly Lys Leu Lys Cys Asp Ile Cys Gly Ile Ile Cys Ile Gly
            115   120   125
Pro Asn Val Leu Met Val His Lys Arg Ser His Thr Gly Glu Arg Pro
        130   135   140
Phe Gln Cys Asn Gln Cys Gly Ala Ser Phe Thr Gln Lys Gly Asn Leu
145   150   155   160
Leu Arg His Ile Lys Leu His Ser Gly Glu Lys Pro Phe Lys Cys His
                165   170   175
Leu Cys Asn Tyr Ala Cys Arg Arg Arg Asp Ala Leu Thr Gly His Leu
            180   185   190
Arg Thr His Ser Val Gly Lys Pro His Lys Cys Gly Tyr Cys Gly Arg
            195   200   205
Ser Tyr Lys Gln Arg Ser Ser Leu Glu Glu His Lys Glu Arg Cys His
    210   215   220
Asn Tyr Leu Glu Ser Met Gly Leu Pro Gly Thr Leu Tyr Pro Val Ile
225   230   235   240
Lys Glu Glu Thr Asn His Ser Glu Met Ala Glu Asp Leu Cys Lys Ile
                245   250   255
Gly Ser Glu Arg Ser Leu Val Leu Asp Arg Leu Ala Ser Asn Val Ala
            260   265   270
Lys Arg Lys Ser Ser Met Pro Gln Lys Phe Leu Gly Asp Lys Gly Leu
        275   280   285
Ser Asp Thr Pro Tyr Asp Ser Ser Ala Ser Tyr Glu Lys Glu Asn Glu
    290   295   300
Met Met Lys Ser His Val Met Asp Gln Ala Ile Asn Asn Ala Ile Asn
305   310   315   320
Tyr Leu Gly Ala Glu Ser Leu Arg Pro Leu Val Gln Thr Pro Pro Gly
                325   330   335
Gly Ser Glu Val Val Pro Val Ile Ser Pro Met Tyr Gln Leu His Lys

```
              340              345              350
Pro Leu Ala Glu Gly Thr Pro Arg Ser Asn His Ser Ala Gln Asp Ser
          355              360              365
Ala Val Glu Asn Leu Leu Leu Leu Ser Lys Ala Lys Leu Val Pro Ser
      370              375              380
Glu Arg Glu Ala Ser Pro Ser Asn Ser Cys Gln Asp Ser Thr Asp Thr
385              390              395              400
Glu Ser Asn Asn Glu Glu Gln Arg Ser Gly Leu Ile Tyr Leu Thr Asn
              405              410              415
His Ile Ala Pro His Ala Arg Asn Gly Leu Ser Leu Lys Glu Glu His
          420              425              430
Arg Ala Tyr Asp Leu Leu Arg Ala Ala Ser Glu Asn Ser Gln Asp Ala
      435              440              445
Leu Arg Val Val Ser Thr Ser Gly Glu Gln Met Lys Val Tyr Lys Cys
      450              455              460
Glu His Cys Arg Val Leu Phe Leu Asp His Val Met Tyr Thr Ile His
465              470              475              480
Met Gly Cys His Gly Phe Arg Asp Pro Phe Glu Cys Asn Met Cys Gly
          485              490              495
Tyr His Ser Gln Asp Arg Tyr Glu Phe Ser Ser His Ile Thr Arg Gly
          500              505              510
Glu His Arg Phe His Met Ser
          515
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<210> 4195
<211> 1200
<212> DNA
<213> Homo sapiens

<400> 4195
nngggaagtc ttcttgcagc cgtgtggacg aatttggccc aaccttttca taggagatgc
60
agctggtcct tactccctgc catggggctc tgcacgtttg ccaccctggc actgatcctg
120
ctggtgctgc tggaggctct ggcccaggcg gacacacaga agatggtgga agcccagcgt
180
ggggtcggcc ctagagcctg ctactccatc tggctcctcc tggcgcctac accccctctc
240
agccactgtc ttcagtctcc acagaaacag catcaagtgt gcggagacag gcggctgaaa
300
gccagcagca cgaactgccc gtcagagaag tgcacagcct gggccagata ctcccacagg
360
atggactcac tgcagaagca ggacctccgg aggcccaaga tccatggggc agtccaggca
420
tctccctacc agccgcccac attggcttcg ctgcagcgct tgctgtgggt ccgtcaggct
480
gccacactga accatatcga tgaggtctgg cccagcctct tcctgggaga tgcgtacgca
540
gcccgggaca agagcaagct gatccagctg ggaatcaccc acgttgtgaa tgccgctgca
600
ggcaagttcc aggtggacac aggtgccaaa ttctaccgtg gaatgtccct ggagtactat
660
ggcatcgagg cggacgacaa ccccttcttc gacctcagtg tctactttct gcctgttgct
720
```

cgatacatcc gagctgccct cagtgttccc caaggccgcg tgctggtaca ctgtgccatg
780
ggggtaagcc gctctgccac acttgtcctg gccttcctca tgatctatga gaacatgacg
840
ctggtagagg ccatccagac ggtgcaggcc caccgcaata tctgccctaa ctcaggcttc
900
ctccggcagc tccaggttct ggacaaccga ctggggcggg agacggggcg gttctgatct
960
ggcaggcagc caggatccct gacccttggc ccaaccccac cagcctggcc ctgggaacag
1020
caggctctgc tgtttctagt gaccctgaga tgtaaacagc aagtgggggc tgaggcagag
1080
gcagggatag ctgggtggtg acctcttagc gggtggattt ccctgaccca attcagagat
1140
tctttatgca aaagtgagtt cagtccatct ctataataaa atattcatcg tcataaaaaa
1200

<210> 4196
<211> 318
<212> PRT
<213> Homo sapiens

<400> 4196

Xaa	Gly	Ser	Leu	Leu	Ala	Ala	Val	Trp	Thr	Asn	Leu	Ala	Gln	Pro	Phe
1				5					10					15	
His	Arg	Arg	Cys	Ser	Trp	Ser	Leu	Leu	Pro	Ala	Met	Gly	Leu	Cys	Thr
			20					25					30		
Phe	Ala	Thr	Leu	Ala	Leu	Ile	Leu	Leu	Val	Leu	Leu	Glu	Ala	Leu	Ala
			35					40					45		
Gln	Ala	Asp	Thr	Gln	Lys	Met	Val	Glu	Ala	Gln	Arg	Gly	Val	Gly	Pro
	50					55					60				
Arg	Ala	Cys	Tyr	Ser	Ile	Trp	Leu	Leu	Leu	Ala	Pro	Thr	Pro	Pro	Leu
65					70					75					80
Ser	His	Cys	Leu	Gln	Ser	Pro	Gln	Lys	Gln	His	Gln	Val	Cys	Gly	Asp
				85					90					95	
Arg	Arg	Leu	Lys	Ala	Ser	Ser	Thr	Asn	Cys	Pro	Ser	Glu	Lys	Cys	Thr
			100					105					110		
Ala	Trp	Ala	Arg	Tyr	Ser	His	Arg	Met	Asp	Ser	Leu	Gln	Lys	Gln	Asp
		115					120					125			
Leu	Arg	Arg	Pro	Lys	Ile	His	Gly	Ala	Val	Gln	Ala	Ser	Pro	Tyr	Gln
	130					135					140				
Pro	Pro	Thr	Leu	Ala	Ser	Leu	Gln	Arg	Leu	Leu	Trp	Val	Arg	Gln	Ala
145					150					155					160
Ala	Thr	Leu	Asn	His	Ile	Asp	Glu	Val	Trp	Pro	Ser	Leu	Phe	Leu	Gly
				165					170					175	
Asp	Ala	Tyr	Ala	Ala	Arg	Asp	Lys	Ser	Lys	Leu	Ile	Gln	Leu	Gly	Ile
			180					185					190		
Thr	His	Val	Val	Asn	Ala	Ala	Ala	Gly	Lys	Phe	Gln	Val	Asp	Thr	Gly
		195					200					205			
Ala	Lys	Phe	Tyr	Arg	Gly	Met	Ser	Leu	Glu	Tyr	Tyr	Gly	Ile	Glu	Ala
	210					215					220				
Asp	Asp	Asn	Pro	Phe	Phe	Asp	Leu	Ser	Val	Tyr	Phe	Leu	Pro	Val	Ala
225					230					235					240
Arg	Tyr	Ile	Arg	Ala	Ala	Leu	Ser	Val	Pro	Gln	Gly	Arg	Val	Leu	Val

```
                    245                    250                    255
His Cys Ala Met Gly Val Ser Arg Ser Ala Thr Leu Val Leu Ala Phe
                260                    265                    270
Leu Met Ile Tyr Glu Asn Met Thr Leu Val Glu Ala Ile Gln Thr Val
            275                    280                    285
Gln Ala His Arg Asn Ile Cys Pro Asn Ser Gly Phe Leu Arg Gln Leu
        290                    295                    300
Gln Val Leu Asp Asn Arg Leu Gly Arg Glu Thr Gly Arg Phe
305                    310                    315
```

```
<210> 4197
<211> 597
<212> DNA
<213> Homo sapiens
```

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<400> 4197
cggttgctgt cgattgttgg aagacaaaga gccagcccag gatggcagaa ctggtcctct
60
gcaagaaaca gcgcgtcagc tgccgaggcg cgttccatgg ccctgcccac ccaggcacag
120
gtggtcatct gtggaggtgg aatcacgggc acttctgtgg cccatcacca atccaaaatg
180
gggtggaagg atattgtcct tttggagcag ggcaggctgg ctgctggctc taccaggttc
240
tgtgctggca tcctgagcac tgccaggcac ttgaccattg agcagaagat ggcagactac
300
tcaaacaaac tctactatca gttagagcaa gaaacaggga tccaaacagg ttacacaagg
360
acaggctcaa tctttctggc ccaaactcag gaccgactga tctccctgaa gcgcatcaac
420
gcagggctga agtacgtaag agtctagaag cgtgtcctga ctttaccaca ctggcctctg
480
ccaaagagcc tgtgaatgtc attgtccctt gtgttctgtg gcagtgttat aggtatccct
540
tctgagatca tctcccccaa gaaagtggcc gagcttcacc atctcctcaa cgtgcac
597
```

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<210> 4198
<211> 148
<212> PRT
<213> Homo sapiens
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<400> 4198
Arg Leu Leu Ser Ile Val Gly Arg Gln Arg Ala Ser Pro Gly Trp Gln
  1                  5                   10                   15
Asn Trp Ser Ser Ala Arg Asn Ser Ala Ser Ala Ala Glu Ala Arg Ser
            20                    25                    30
Met Ala Leu Pro Thr Gln Ala Gln Val Val Ile Cys Gly Gly Gly Ile
            35                    40                    45
Thr Gly Thr Ser Val Ala His His Gln Ser Lys Met Gly Trp Lys Asp
        50                    55                    60
Ile Val Leu Leu Glu Gln Gly Arg Leu Ala Ala Gly Ser Thr Arg Phe
65                    70                    75                    80
Cys Ala Gly Ile Leu Ser Thr Ala Arg His Leu Thr Ile Glu Gln Lys
```

```
                         85                    90                    95
Met Ala Asp Tyr Ser Asn Lys Leu Tyr Tyr Gln Leu Glu Gln Glu Thr
                        100                   105                   110
Gly Ile Gln Thr Gly Tyr Thr Arg Thr Gly Ser Ile Phe Leu Ala Gln
            115                   120                   125
Thr Gln Asp Arg Leu Ile Ser Leu Lys Arg Ile Asn Ala Gly Leu Lys
            130                   135                   140
Tyr Val Arg Val
145
```

```
<210> 4199
<211> 1769
<212> DNA
<213> Homo sapiens
```

```
<400> 4199
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60
ccggggcacc aaggagccgt tggagggtcc gggcggaggc ccgctcgtgt ggaagtcgtc
120
gacgccgccg ctcgtccgtc ctcccgtccg ttctcgctcc cggccgccat catgctggcg
180
ctcatctccc gcctgctgga ctggttccgt tcgctcttct ggaaggaaga gatggagctg
240
acgctcgtgg ggctgcagta ctcgggcaag accaccttcg tcaatgtcat cgcgtcaggt
300
caattcagtg aagatatgat acccacagtg ggcttcaaca tgaggaaggt aactaaaggt
360
aacgtcacaa taaagatctg ggacatagga ggacaacccc gatttcgaag catgtgggag
420
cggtattgca gaggagtcaa tgctattgtt tacatgatag atgctgcaga tcgtgaaaag
480
atagaagctt cccgaaatga gctccacaac ctactggaca aaccacagtt acaaggaatt
540
ccagtgctag tgcttggaaa caagcgagac cttccgggag cattggatga gaaggagctg
600
attgagaaaa tgaatctgtc tgctattcag gatagagaaa tttgctgcta ttcaatttct
660
tgcaaagaaa aggataatat agatatcaca cttcagtggc ttattcagca ttcaaaatct
720
agaagaagct gaagcatctc ctgaagtctt ccagtccttc ttggctataa tcctagaatt
780
attgtccgtt cctctgaagt aattcccaga atacggtcct tcctaaaccc cagaaattgc
840
ctttttcaga gtttatttct catgtgcact gctgaagatg aatatcccta atccttcata
900
aagaatcagc tagagttgtc atgataaagt cagcacacac aaaaaggctt cttacacata
960
cctgtcttaa accatgtgta gagctttaaa aacagaaaaa aaaccccata tacttatgac
1020
catcttaaat caagaaaatt gcatatttcc attctggtct ttctgggcca gattttttata
1080
ttggttttca gtaaatgtct atctataata tttcattata gagtccagta gcttaatact
1140
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gacactgact tgatacagca tgaagtttct agtgccacac acagtattta gaaaaccttt
1200
aggcgtgaat gactcatgtg ggatatatgt aaacataatg tttattttat ctcacaaatg
1260
catgtgaaat gtataattac atcttaggaa tccaaaatgg tctgcagaga gtgagcggag
1320
gcaccagatc aatgttggtt ctttgcactg gtgagattct gcctgatgaa tattaaagat
1380
atcctgcttt ctgagaactc tatcaccaga tggcagttgg gatatgggag gaactaaagc
1440
atcctgtttt gtatctgtcc agatcattat ttctgtctct tgttttttct tcctggttca
1500
ggatactttt ttaaggggtt gagaattgaa gattttccaa aagcgttcat gaatttagag
1560
cattccaccc aatataataa aacctgttaa gaatgtcagt ctttgttcaa acatctgttt
1620
gttctatctc cagtcattaa atcagtgctg ctgcatgaca ctcttaactc ctgacttttt
1680
atatccagtc ataaagttga ctttcagcac aaaagatact tataaacaaa taaaaaattt
1740
ttatttttct ctcttactga tgtaagctt
1769

<210> 4200
<211> 186
<212> PRT
<213> Homo sapiens

<400> 4200
Met Leu Ala Leu Ile Ser Arg Leu Leu Asp Trp Phe Arg Ser Leu Phe
1   5   10   15
Trp Lys Glu Glu Met Glu Leu Thr Leu Val Gly Leu Gln Tyr Ser Gly
            20   25   30
Lys Thr Thr Phe Val Asn Val Ile Ala Ser Gly Gln Phe Ser Glu Asp
        35   40   45
Met Ile Pro Thr Val Gly Phe Asn Met Arg Lys Val Thr Lys Gly Asn
    50   55   60
Val Thr Ile Lys Ile Trp Asp Ile Gly Gly Gln Pro Arg Phe Arg Ser
65   70   75   80
Met Trp Glu Arg Tyr Cys Arg Gly Val Asn Ala Ile Val Tyr Met Ile
                85   90   95
Asp Ala Ala Asp Arg Glu Lys Ile Glu Ala Ser Arg Asn Glu Leu His
            100   105   110
Asn Leu Leu Asp Lys Pro Gln Leu Gln Gly Ile Pro Val Leu Val Leu
        115   120   125
Gly Asn Lys Arg Asp Leu Pro Gly Ala Leu Asp Glu Lys Glu Leu Ile
    130   135   140
Glu Lys Met Asn Leu Ser Ala Ile Gln Asp Arg Glu Ile Cys Cys Tyr
145   150   155   160
Ser Ile Ser Cys Lys Glu Lys Asp Asn Ile Asp Ile Thr Leu Gln Trp
                165   170   175
Leu Ile Gln His Ser Lys Ser Arg Arg Ser
                180   185

3393

<210> 4201
<211> 917
<212> DNA
<213> Homo sapiens

<400> 4201
ctgcaggacc tggagaatac ctgccctctc cctgcaacat cctccttttc ctttgcttcc
60
ctcctcaact accgcaacat ctggaaaaat ctgcttatcc tgggcttcac caacttcatt
120
gcccatgcca ttcgccactg ctaccagcct gtgggaggag gagggagccc atcggacttc
180
tacctgtgct ctctgctggc cagcggancc gcagccctgg cctgtgtctt cctgggggtc
240
accgtggacc gatttggccg ccggggcatc cttcttctct ccatgaccct taccggcatt
300
gcttccctgg tcctgctggg cctgtgggat tatctgaacg aggctgccat caccactttc
360
tctgtccttg ggctcttctc ctcccaagct gccgccatcc tcagcaccct ccttgctgct
420
gaggtcatcc ccaccactgt ccggggccgt ggcctgggcc tgatcatggc tctaggggcg
480
cttggaggac tgagcggccc ggcccagcgc ctccacatgg ccatggagc cttcctgcag
540
cacgtggtgc tggcggcctg cgccctcctc tgcattctca gcattatgct gctgccggag
600
accaagcgca agctcctgcc cgaggtgctc cgggacgggg agctgtgtcg ccggccttcc
660
ctgctgcggc agccaacccc tacccgctgt gaccacgtcc cgctgcttgc cacccccaac
720
cctgccctct gaacggcctc tgagtaccct ccctgctgct ttgcattcac ttccttggcc
780
agagtcaggg gacaggagag agctccaca ctgtaaccac tgggtctggg ctccatcctg
840
cgcccaaaga catccaccca gacctcatta attcttgctc tatcaatctg tttcaataaa
900
gacatttgga ataaacg
917

<210> 4202
<211> 243
<212> PRT
<213> Homo sapiens

<400> 4202
Leu Gln Asp Leu Glu Asn Thr Cys Pro Leu Pro Ala Thr Ser Ser Phe
 1   5   10   15
Ser Phe Ala Ser Leu Leu Asn Tyr Arg Asn Ile Trp Lys Asn Leu Leu
            20   25   30
Ile Leu Gly Phe Thr Asn Phe Ile Ala His Ala Ile Arg His Cys Tyr
        35   40   45
Gln Pro Val Gly Gly Gly Gly Ser Pro Ser Asp Phe Tyr Leu Cys Ser
        50   55   60
Leu Leu Ala Ser Gly Xaa Ala Ala Leu Ala Cys Val Phe Leu Gly Val

```
65                      70                      75                      80
Thr Val Asp Arg Phe Gly Arg Arg Gly Ile Leu Leu Leu Ser Met Thr
                    85                      90                      95
Leu Thr Gly Ile Ala Ser Leu Val Leu Leu Gly Leu Trp Asp Tyr Leu
                100                     105                     110
Asn Glu Ala Ala Ile Thr Thr Phe Ser Val Leu Gly Leu Phe Ser Ser
            115                     120                     125
Gln Ala Ala Ala Ile Leu Ser Thr Leu Leu Ala Ala Glu Val Ile Pro
        130                     135                     140
Thr Thr Val Arg Gly Arg Gly Leu Gly Leu Ile Met Ala Leu Gly Ala
145                     150                     155                     160
Leu Gly Gly Leu Ser Gly Pro Ala Gln Arg Leu His Met Gly His Gly
                165                     170                     175
Ala Phe Leu Gln His Val Val Leu Ala Ala Cys Ala Leu Leu Cys Ile
            180                     185                     190
Leu Ser Ile Met Leu Leu Pro Glu Thr Lys Arg Lys Leu Leu Pro Glu
        195                     200                     205
Val Leu Arg Asp Gly Glu Leu Cys Arg Arg Pro Ser Leu Leu Arg Gln
    210                     215                     220
Pro Thr Pro Thr Arg Cys Asp His Val Pro Leu Leu Ala Thr Pro Asn
225                     230                     235                     240
Pro Ala Leu


<210> 4203
<211> 1368
<212> DNA
<213> Homo sapiens

<400> 4203
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60
gctaggctcc atgcccagtt cctgtgagga gaaaacacgt ttctatgtgc ccggcaggta
120
ggaggcactc acaaaatgtt actttgtctt tacagaattt tctgaaggag agataaaaac
180
tgagttaaat aaagatgatc agaatggatg agaaataact ttagacatta tttcattgaa
240
ccttcccaac tgaaattatt ttatgatgtt ataacatgga tagtaactca agtagcaata
300
agttacacag ttgtgccatt tgtgcttctt tctataaaac catcactcac gttttacagc
360
tcctggtatt attgcctgca cattcttggt atcttagtat tattgttgtt gccagtgaaa
420
aaaaactcaa agaagaaaga atacacatga aaacattcag ctctcacaat ccaaaaagtt
480
tgatgaagga gaaaattctt tgggacagaa cagtttttct acaacaaaca atgtttgcaa
540
tcagaatcaa gaaatagcct cgagacattc atcactaaag cagtgatcgg gaaggctctg
600
agggctgttt ttttttttg atgttaacag aaaccaatct tagcaccttt tcaaggggtt
660
tgagtttgtt ggaaaagcag ttaactgggg ggaaatggac agttatagat aaggaatttc
720
```

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ctgtacacca gattggaaat ggagtgaaac aagccctccc atgccatgtc cccgtgggcc
780
acgccttatg taagaatatt tccatatttc agtgggcact cccaacctca gcacttgtcc
840
gtagggtcac acgcgtgccc tgttgctgaa tgtatgttgc gtatcccaag gcactgaaga
900
ggtggaaaaa taatcgtgtc aatctggatg atagagagaa attaactttt ccaaatgaat
960
gtcttgcctt aaaccctcta tttcctaaaa tattgttcct aaatggtatt ttcaagtgta
1020
atattgtgag aacgctactg cagtagttga tgttgtgtgc tgtaaaggat tttaggagga
1080
atttgaaaca ggatatttaa gagtgtggat attttaaaa tgcaataaac atctcagtat
1140
ttgaagggtt ttcttaaagt atgtcaaatg actacaatcc atagtgaaac tgtaaacagt
1200
aatggacgcc aaattatagg tagctgattt tgctggagag tttaattacc ttgtgcagtc
1260
aaagagcgct ccagaagga atctcttaaa acataatgag aggtttggta atgtgatatt
1320
ttaagcttac tctttttctt aaaagagaga ggtgacgaag gaaggcag
1368


<210> 4204
<211> 80
<212> PRT
<213> Homo sapiens


<400> 4204
Met Arg Asn Asn Phe Arg His Tyr Phe Ile Glu Pro Ser Gln Leu Lys
 1               5                  10                  15
Leu Phe Tyr Asp Val Ile Thr Trp Ile Val Thr Gln Val Ala Ile Ser
            20                  25                  30
Tyr Thr Val Val Pro Phe Val Leu Leu Ser Ile Lys Pro Ser Leu Thr
        35                  40                  45
Phe Tyr Ser Ser Trp Tyr Tyr Cys Leu His Ile Leu Gly Ile Leu Val
    50                  55                  60
Leu Leu Leu Leu Pro Val Lys Lys Asn Ser Lys Lys Lys Glu Tyr Thr
65                  70                  75                  80


<210> 4205
<211> 6523
<212> DNA
<213> Homo sapiens


<400> 4205
gaagaggagg aggaagagga agaggaagag gaggaggagg aggcagctcc tgatgtgatc
60
tttcaggaag acacctctca cacctctgcc cagaaggccc ctgagctccg gggcccagaa
120
tcacccagtc ccaagcctga gtactctgtt attgtggagg tccgctcgga tgatgacaag
180
gacgaggaca cccactcccg gaagtcaaca gtcactgacg agtcggagat gcaggacatg
240
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atgacccggg gaaacctggg cctcctggag caggccatcg ccctgaaggc tgaacaggtg
300
cgcacagtct gcgagccggg ctgcccgcct gccgagcaga gccagctggg cctgggagag
360
ccagggaagg cagcaaagcc cctggacact gtgcggaaga gttactacag taaagatcct
420
tcaagagctg agaagcgtga gatcaagtgt ccaacaccag gctgtgatgg cactggccac
480
gttaccgggt tgtaccctca ccaccgcagc ctttctggct gtccccacaa ggataggatc
540
cccccagaga tcttagccat gcatgagaac gtgctgaagt gccccactcc tggctgcaca
600
ggccagggtc acgtgaacag caaccgcaac acgcacagaa gtttgtctgg gtgtcccatt
660
gctgccgccg aaaaattagc caaatcccat gagaagcagc agccgcagac aggagatcct
720
tccaagagta gctccaattc cgatcggatc ctcaggccca tgtgcttcgt gaagcagctc
780
gaggtccctc catatgggag ctaccggccc aacgtggccc ccgccacacc cagggccaac
840
ttggccaagg agctggagaa gttctccaag gtcacctttg actacgcaag tttcgatgct
900
caggtttttg gcaaacgcat gcttgcccca aagattcaga ccagcgaaac ctcacctaaa
960
gcctttcaat gctttgacta ctcgcaggac gccgaggctg cacacatggc tgccactgcc
1020
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Ala Pro Glu Leu Arg Gly Pro Glu Ser Pro Ser Pro Lys Pro Glu Tyr
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Ser Val Ile Val Glu Val Arg Ser Asp Asp Asp Lys Asp Glu Asp Thr
             50                     55                     60
His Ser Arg Lys Ser Thr Val Thr Asp Glu Ser Glu Met Gln Asp Met
65                      70                     75                     80
Met Thr Arg Gly Asn Leu Gly Leu Leu Glu Gln Ala Ile Ala Leu Lys
                 85                     90                     95
Ala Glu Gln Val Arg Thr Val Cys Glu Pro Gly Cys Pro Pro Ala Glu
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Gln Ser Gln Leu Gly Leu Gly Glu Pro Gly Lys Ala Ala Lys Pro Leu
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Asp Thr Val Arg Lys Ser Tyr Tyr Ser Lys Asp Pro Ser Arg Ala Glu
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Lys Arg Glu Ile Lys Cys Pro Thr Pro Gly Cys Asp Gly Thr Gly His
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Val Thr Gly Leu Tyr Pro His His Arg Ser Leu Ser Gly Cys Pro His
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Lys Asp Arg Ile Pro Pro Glu Ile Leu Ala Met His Glu Asn Val Leu
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Lys Cys Pro Thr Pro Gly Cys Thr Gly Gln Gly His Val Asn Ser Asn
             195                    200                    205
Arg Asn Thr His Arg Ser Leu Ser Gly Cys Pro Ile Ala Ala Ala Glu
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Lys Leu Ala Lys Ser His Glu Lys Gln Gln Pro Gln Thr Gly Asp Pro
225                    230                    235                    240
Ser Lys Ser Ser Ser Asn Ser Asp Arg Ile Leu Arg Pro Met Cys Phe
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Val Lys Gln Leu Glu Val Pro Pro Tyr Gly Ser Tyr Arg Pro Asn Val
             260                    265                    270
Ala Pro Ala Thr Pro Arg Ala Asn Leu Ala Lys Glu Leu Glu Lys Phe
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Ser Lys Val Thr Phe Asp Tyr Ala Ser Phe Asp Ala Gln Val Phe Gly
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Lys Arg Met Leu Ala Pro Lys Ile Gln Thr Ser Glu Thr Ser Pro Lys
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Ala Phe Gln Cys Phe Asp Tyr Ser Gln Asp Ala Glu Ala Ala His Met
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Ala Ala Thr Ala Ile Leu Asn Leu Ser Thr Arg Cys Trp Glu Met Pro
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Glu Asn Leu Ser Thr Lys Pro Gln Asp Leu Pro Ser Lys Ser Val Asp
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Arg Lys Arg Glu Asn Ala Phe Pro Ser Ser Ser Ser Cys Ser Ser Ser
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Pro Gly Val Lys Ser Pro Asp Ala Ser Gln Arg His Ser Ser Thr Ser
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Ala Pro Ser Ser Ser Met Thr Ser Pro Gln Ser Ser Gln Ala Ser Arg
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Gln Asp Glu Trp Asp Arg Pro Leu Asp Tyr Thr Lys Pro Ser Arg Leu
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Arg Lys Tyr Pro Gly Glu Val Thr Leu Thr Asn Phe Lys Leu Lys Phe
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Leu Ser Lys Asp Ile Lys Lys Glu Leu Leu Thr Cys Pro Thr Pro Gly
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Cys Asp Gly Ser Gly His Ile Thr Gly Asn Tyr Ala Ser His Arg Ser
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Leu Ser Gly Cys Pro Leu Ala Asp Lys Ser Leu Arg Asn Leu Met Ala
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Ala His Ser Ala Asp Leu Lys Cys Pro Thr Pro Gly Cys Asp Gly Ser
545                     550                     555                     560
Gly His Ile Thr Gly Asn Tyr Ala Ser His Arg Ser Leu Ser Gly Cys
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Pro Arg Ala Lys Lys Ser Gly Val Lys Val Ala Pro Thr Lys Asp Asp
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Lys Glu Asp Pro Glu Leu Met Lys Cys Pro Val Pro Gly Cys Val Gly
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Leu Gly His Ile Ser Gly Lys Tyr Ala Ser His Arg Ser Ala Ser Gly
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Cys Pro Leu Ala Ala Arg Arg Gln Lys Glu Gly Ser Leu Asn Gly Ser
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Pro Gly Cys Asp Gly Ser Gly His Ala Asn Gly Ser Phe Leu Thr His
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Arg Ser Leu Ser Gly Cys Pro Arg Ala Thr Phe Ala Gly Lys Lys Gly
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Lys Leu Ser Gly Asp Glu Val Leu Ser Pro Lys Phe Lys Thr Ser Asp
    690                     695                     700
Val Leu Glu Asn Asp Glu Glu Ile Lys Gln Leu Asn Gln Glu Ile Arg
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Asp Leu Asn Glu Ser Asn Ser Glu Met Glu Ala Ala Met Val Gln Leu
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Gln Ser Gln Ile Ser Ser Met Glu Lys Asn Leu Lys Asn Ile Glu Glu
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Glu Asn Lys Leu Ile Glu Glu Gln Asn Glu Ala Leu Phe Leu Glu Leu
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Ser Gly Leu Ser Gln Ala Leu Ile Gln Ser Leu Ala Asn Ile Arg Leu
    770                     775                     780
Pro His Met Glu Pro Ile Cys Glu Gln Asn Phe Asp Ala Tyr Val Ser
785                     790                     795                     800
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<211> 1016
<212> DNA
<213> Homo sapiens

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<212> PRT
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Gln Ser Asp Thr Asn Lys Arg Glu Leu Val Gly Asn Asp Phe Lys Ser
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Ile Asp Arg Arg Thr Ser Thr Pro Asn Ser Arg Ile Gln Arg Ala Thr
          35   40   45
Thr Val Ser Gln Lys Lys Ser Ser Lys Leu Cys Thr Cys Thr Glu Pro
       50   55   60
Ile Arg Lys Val Pro Val Ser Lys Thr Pro Lys Lys Thr His Ser Asp
65   70   75   80
Ala Lys Lys Gly Gln Asn Arg Ser Ser Asn Tyr Leu Ser Cys Arg Thr

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Thr Pro Ala Ile Val Pro Pro Lys Lys Phe Arg Gln Cys Pro Glu Pro
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Thr Ser Thr Ala Glu Lys Leu Gly Leu Lys Lys Gly Pro Arg Lys Ala
                    115                 120                 125
Tyr Glu Leu Ser Gln Arg Ser Leu Asp Tyr Val Ala Gln Leu Arg Asp
                    130                 135                 140
His Gly Lys Thr Val Gly Val Val Asp Thr Arg Lys Lys Thr Lys Leu
145                 150                 155                 160
Ile Ser Pro Gln Asn Leu Ser Val Arg Asn Asn Lys Lys Leu Leu Thr
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<212> PRT
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Tyr Glu Glu Glu Ile Met Arg Asn Gln Phe Ser Val Lys Cys Trp Leu
        35   40   45
Arg Tyr Ile Glu Phe Lys Gln Gly Ala Pro Lys Pro Arg Leu Asn Gln
    50   55   60
Leu Tyr Glu Arg Ala Leu Lys Leu Leu Pro Cys Ser Tyr Lys Leu Trp
65   70   75   80
Tyr Arg Tyr Leu Lys Ala Arg Arg Ala Gln Val Lys His Arg Cys Val
                85   90   95
Thr Asp Pro Ala Tyr Glu Asp Val Asn Asn Cys His Glu Arg Ala Phe
            100   105   110
Val Phe Met His Lys Met Pro Arg Leu Trp Leu Asp Tyr Cys Gln Phe
        115   120   125
Leu Met Asp Gln Gly Arg Val Thr His Thr Arg Arg Thr Phe Asp Arg
    130   135   140
Ala Leu Arg Ala Leu Pro Ile Thr Gln His Ser Arg Ile Trp Pro Leu
145   150   155   160
Tyr Leu Arg Phe Leu Arg Ser His Pro Leu Pro Glu Thr Ala Val Arg
                165   170   175
Gly Tyr Arg Arg Phe Leu Lys Leu Ser Pro Glu Ser Ala Glu Glu Tyr
            180   185   190
Ile Glu Tyr Leu Lys Ser Ser Asp Arg Leu Asp Glu Ala Ala Gln Arg
        195   200   205
Leu Ala Thr Val Val Asn Asp Glu Arg Phe Val Ser Lys Ala Gly Lys
    210   215   220
Ser Asn Tyr Gln Leu Trp His Glu Leu Cys Asp Leu Ile Ser Gln Asn
225   230   235   240
Pro Asp Lys Val Gln Ser Leu Asn Val Asp Ala Ile Ile Arg Gly Gly
            245   250   255
Leu Thr Arg Phe Thr Asp Gln Leu Gly Lys Leu Trp Cys Ser Leu Ala
            260   265   270
Asp Tyr Tyr Ile Arg Ser Gly His Phe Glu Lys Ala Arg Asp Val Tyr
        275   280   285
Glu Glu Ala Ile Arg Thr Val Met Thr Val Arg Asp Phe Thr Gln Val
    290   295   300
Phe Asp Ser Tyr Ala Gln Phe Glu Glu Ser Met Ile Ala Ala Lys Met
305   310   315   320
Glu Thr Ala Ser Glu Leu Gly Arg Glu Glu Glu Asp Asp Val Asp Leu
            325   330   335
Glu Leu Arg Leu Ala Arg Phe Glu His Leu Ile Ser Arg Arg Pro Leu

```
            340                   345                   350
His Leu Ser Ser Val Leu Leu Arg Gln Asn Pro His His Val His Glu
            355                   360                   365
Trp His Lys Arg Val Ala Leu His Gln Gly Arg Pro Arg Glu Ile Ile
            370                   375                   380
Asn Thr Tyr Thr Glu Ala Val Gln Thr Val Asp Pro Phe Lys Ala Thr
385                   390                   395                   400
Gly Lys Pro His Thr Leu Trp Val Ala Phe Ala Lys Phe Tyr Glu Asp
                  405                   410                   415
Asn Gly Gln Leu Asp Asp Ala Arg Val Ile Leu Glu Lys Ala Thr Lys
                  420                   425                   430
Val Asn Phe Lys Gln Val Asp Asp Leu Ala Ser Val Trp Cys Gln Cys
                  435                   440                   445
Gly Glu Leu Glu Leu Arg His Glu Asn Tyr Asp Glu Ala Leu Arg Leu
            450                   455                   460
Leu Arg Lys Ala Thr Ala Leu Pro Pro Pro Gly Arg Val Phe Asp Gly
465                   470                   475                   480
Ser Glu Pro Val Gln Asn Arg Val Tyr Lys Ser Leu Lys Val Trp Ser
                  485                   490                   495
Met Leu Ala Asp Leu Glu Glu Ser Leu Gly Thr Phe Gln Ser Thr Lys
                  500                   505                   510
Ala Val Tyr Asp Arg Ile Leu Asp Leu Arg Ile Ala Thr Pro Gln Ile
                  515                   520                   525
Val Ile Asn Tyr Ala Met Phe Leu Glu Glu His Lys Tyr Phe Glu Glu
            530                   535                   540
Ser Phe Lys Ala Tyr Glu Arg Gly Ile Ser Leu Phe Lys Trp Pro Asn
545                   550                   555                   560
Val Ser Asp Ile Trp Ser Thr Tyr Leu Thr Lys Phe Ile Ala Arg Tyr
                  565                   570                   575
Gly Gly Arg Lys Leu Glu Arg Ala Arg Asp Leu Phe Glu Gln Ala Leu
                  580                   585                   590
Asp Gly Cys Pro Pro Lys Tyr Ala Lys Thr Leu Tyr Leu Leu Tyr Ala
            595                   600                   605
Gln Leu Glu Glu Glu Trp Gly Leu Ala Arg His Ala Met Ala Val Tyr
            610                   615                   620
Glu Arg Ala Thr Arg Ala Val Glu Pro Ala Gln Gln Tyr Asp Met Phe
625                   630                   635                   640
Asn Ile Tyr Ile Lys Arg Ala Ala Glu Ile Tyr Gly Val Thr His Thr
                  645                   650                   655
Arg Gly Ile Tyr Gln Lys Ala Ile Glu Val Leu Ser Asp Glu His Ala
                  660                   665                   670
Arg Glu Met Cys Leu Arg Phe Ala Asp Met Glu Cys Lys Leu Gly Glu
            675                   680                   685
Ile Asp Arg Ala Arg Ala Ile Tyr Ser Phe Cys Ser Gln Ile Cys Asp
            690                   695                   700
Pro Arg Thr Thr Gly Ala Phe Trp Gln Thr Trp Lys Asp Phe Glu Val
705                   710                   715                   720
Arg His Gly Asn Glu Asp Thr Ile Arg Glu Met Leu Arg Ile Arg Arg
                  725                   730                   735
Ser Val Gln Ala Thr Tyr Asn Thr Gln Val Asn Phe Met Ala Ser Gln
                  740                   745                   750
Met Leu Lys Val Ser Gly Ser Ala Thr Gly Thr Val Ser Asp Leu Ala
            755                   760                   765
Pro Gly Gln Ser Gly Met Asp Asp Met Lys Leu Leu Glu Gln Arg Ala
```

```
            770                      775                      780
Glu Gln Leu Ala Ala Glu Ala Glu Arg Asp Gln Pro Leu Arg Ala Gln
785                      790                      795                      800
Ser Lys Ile Leu Phe Val Arg Ser Asp Ala Ser Arg Glu Glu Leu Ala
                805                      810                      815
Glu Leu Ala Gln Gln Val Asn Pro Glu Glu Ile Gln Leu Gly Glu Asp
                820                      825                      830
Glu Asp Glu Asp Glu Met Asp Leu Glu Pro Asn Glu Val Arg Leu Glu
                835                      840                      845
Gln Gln Ser Val Pro Ala Ala Val Phe Gly Ser Leu Lys Glu Asp
        850                      855                      860
```

<210> 4211
<211> 456
<212> DNA
<213> Homo sapiens

<400> 4211
ggggatcgct agcccccagc ttctcagaac taaatatgaa agctcttgct cgtctacgct
60
tagttacaac agactccctg ggcctactgt aggggtcaag agcagatttc cagactctca
120
agctggaaaa gagacgctcc acactgcgac gacaaccaac acatgggaca agctgagaaa
180
gtgcactcag gacttcgcgt gatgtcacca ccatggcaat acttagatcc tgttgcttaa
240
gcataccatg tcgctgaaag agggaaagaa aatgaaagag cgtcctttaa aaagacgtaa
300
aattacactt tcactactac tggttcctat ccttgtgcag taaagtacaa cctggccagg
360
gtttaccagc tctacctgca actgagtcag aaaggcaaag tagtcagctt tgtccatgct
420
gtacggaatt tgctccacaa acccccttgc tctaga
456

<210> 4212
<211> 81
<212> PRT
<213> Homo sapiens

<400> 4212
```
Met Leu Lys Gln Gln Asp Leu Ser Ile Ala Met Val Val Thr Ser Arg
 1               5                      10                      15
Glu Val Leu Ser Ala Leu Ser Gln Leu Val Pro Cys Val Gly Cys Arg
                20                      25                      30
Arg Ser Val Glu Arg Leu Phe Ser Ser Leu Arg Val Trp Lys Ser Ala
        35                      40                      45
Leu Asp Pro Tyr Ser Arg Pro Arg Glu Ser Val Val Thr Lys Arg Arg
        50                      55                      60
Arg Ala Arg Ala Phe Ile Phe Ser Ser Glu Lys Leu Gly Ala Ser Asp
65                      70                      75                      80
Pro
```

<210> 4213
<211> 383
<212> DNA
<213> Homo sapiens

<400> 4213
nacgcgtacc tgtgccagcg cgcgcgcttc ttcgcagaga acgagggcct agacgactac
60
atggaggcac gcgagggcat gcacctcaag aacgtggact tccgtgagtt catggtggcc
120
ttcccggacc cggcccggcc gccctggtac gcctgctcgt cggccttctg ggccgcggcg
180
ctgctcacgc tgtcgtggcc gctgcgagtg ctggccgagt accgcacggc ctacgcgcac
240
taccacgtgg agaagctgtt tggcctggag ggcccgggct cggccagcag cgcaggcggt
300
ggcctcagcc ccagcgatga gctgctgccc ccgctcaccc accgcctgcc gcgggtcaac
360
acagtagaca gcacggagct cgg
383

<210> 4214
<211> 127
<212> PRT
<213> Homo sapiens

<400> 4214
Xaa Ala Tyr Leu Cys Gln Arg Ala Arg Phe Phe Ala Glu Asn Glu Gly
 1   5   10   15
Leu Asp Asp Tyr Met Glu Ala Arg Glu Gly Met His Leu Lys Asn Val
            20   25   30
Asp Phe Arg Glu Phe Met Val Ala Phe Pro Asp Pro Ala Arg Pro Pro
        35   40   45
Trp Tyr Ala Cys Ser Ser Ala Phe Trp Ala Ala Ala Leu Leu Thr Leu
    50   55   60
Ser Trp Pro Leu Arg Val Leu Ala Glu Tyr Arg Thr Ala Tyr Ala His
65   70   75   80
Tyr His Val Glu Lys Leu Phe Gly Leu Glu Gly Pro Gly Ser Ala Ser
                85   90   95
Ser Ala Gly Gly Gly Leu Ser Pro Ser Asp Glu Leu Leu Pro Pro Leu
            100   105   110
Thr His Arg Leu Pro Arg Val Asn Thr Val Asp Ser Thr Glu Leu
        115   120   125

<210> 4215
<211> 939
<212> DNA
<213> Homo sapiens

<400> 4215
nggtacctcg gctgaataaa aattcaaaaa aacagcaatg gacaggaact gagaagacg
60
ctggaagaaa gcaaagaaat ggatatcaaa cgtaaagaaa ataaaggcaa tgatacccct
120

3409

ttggccctag agagtacaaa cactgaaaag gagacaagcc tggaggaaac aaaaatcggg
180
gagatcctga tccagggctt gacagaagat atggtgactg ttttaatccg ggcctgcgtg
240
agcatgctgg gagtccctgt ggacccagat actttgcatg ccacccttg tttctgtttg
300
agggtcactc ggggcccca attagccatg atgtttgcag aactgaagaa tacccgcatg
360
atcttgaatt tgacccagag ctcaggcttc aatgggttta ctcccctggt caccttctc
420
ttaagacaca tcattgagga cccctgtacc cttcgtcata ccatggaaaa ggttgttcgc
480
tcagcagcta caagtggagc tggtagcact acctctggtg ttgtgtctgg cagcctcggc
540
tctcgggaga tcaactacat ccttcgtgtc cttgggccag ccgcatgccg caatccagac
600
atattcacag aagtggccaa ctgctgtatc cgcatcgccc ttcctgcccc tcgaggctca
660
ggaactgctt cagatgatga atttgagaat cttagaatta aaggccctaa tgctgtacag
720
ctggtgaaga ccacccctt gaagccctca cctctgcctg tcatccctga tactatcaag
780
gaagtgatct atgatatgct gaatgctctg ctgcatacc atgctccaga ggaagcagat
840
aaatctgatc ctaaacctgg ggttatgacc caagaggttg gccagctcct gcaagacatg
900
ggtgatgatg tataccagca gtaccggtca cttacgcgt
939

<210> 4216
<211> 287
<212> PRT
<213> Homo sapiens

<400> 4216
Met Asp Ile Lys Arg Lys Glu Asn Lys Gly Asn Asp Thr Pro Leu Ala
1   5   10   15
Leu Glu Ser Thr Asn Thr Glu Lys Glu Thr Ser Leu Glu Glu Thr Lys
            20   25   30
Ile Gly Glu Ile Leu Ile Gln Gly Leu Thr Glu Asp Met Val Thr Val
        35   40   45
Leu Ile Arg Ala Cys Val Ser Met Leu Gly Val Pro Val Asp Pro Asp
    50   55   60
Thr Leu His Ala Thr Leu Cys Phe Cys Leu Arg Val Thr Arg Gly Pro
65   70   75   80
Gln Leu Ala Met Met Phe Ala Glu Leu Lys Asn Thr Arg Met Ile Leu
                85   90   95
Asn Leu Thr Gln Ser Ser Gly Phe Asn Gly Phe Thr Pro Leu Val Thr
            100   105   110
Leu Leu Leu Arg His Ile Ile Glu Asp Pro Cys Thr Leu Arg His Thr
        115   120   125
Met Glu Lys Val Val Arg Ser Ala Ala Thr Ser Gly Ala Gly Ser Thr
    130   135   140
Thr Ser Gly Val Val Ser Gly Ser Leu Gly Ser Arg Glu Ile Asn Tyr

```
145                   150                   155                   160
Ile Leu Arg Val Leu Gly Pro Ala Ala Cys Arg Asn Pro Asp Ile Phe
                165                   170                   175
Thr Glu Val Ala Asn Cys Cys Ile Arg Ile Ala Leu Pro Ala Pro Arg
                180                   185                   190
Gly Ser Gly Thr Ala Ser Asp Asp Glu Phe Glu Asn Leu Arg Ile Lys
            195                   200                   205
Gly Pro Asn Ala Val Gln Leu Val Lys Thr Thr Pro Leu Lys Pro Ser
        210                   215                   220
Pro Leu Pro Val Ile Pro Asp Thr Ile Lys Glu Val Ile Tyr Asp Met
225                   230                   235                   240
Leu Asn Ala Leu Ala Ala Tyr His Ala Pro Glu Glu Ala Asp Lys Ser
                245                   250                   255
Asp Pro Lys Pro Gly Val Met Thr Gln Glu Val Gly Gln Leu Leu Gln
            260                   265                   270Met Gly Asp Asp
Val Tyr Gln Gln Tyr Arg Ser Leu Thr Arg
        275                   280                   285
```

<210> 4217
<211> 619
<212> DNA
<213> Homo sapiens

<400> 4217
```
acacacacac gcacacaaaa ctcagccaca ggctcaccag ggtctctctc aacatgcaca
60
catacacaca cacacccctc agtcataggc tcacaagagt ctctcttgtc tctctctcat
120
acatacacac acacacacaa ccagccacag gcccacaaag gtgtctctct ctttgtccct
180
gtctgctctc tcgcactcac acacacacat ctcagccaca ggcccaccag agtctgtctg
240
tctctttgtc tctctcactc tctctcacac acatacacct cagccacagg cccacaaggg
300
tctctctcct tgtccctggc tcctctctct cgcacactcc cacacacaca catacagctc
360
agccacaggc ccacgagggt gtctctctct ctctctctct ctcacacaca cacacacaca
420
cacacacgcc tgtgcagctc cacaggggcc tggggcagga gacagatctg aatacacata
480
ccaccctgtg ctgtgagtgg ccactcccat ccaacaactg agactttctg ttactgggcc
540
aaggttttct gccaaactca cttcccttat aatgaatgaa ttatccctca gaaggttcca
600
cagtcctccc ctggcgcgc
619
```

<210> 4218
<211> 155
<212> PRT
<213> Homo sapiens

<400> 4218
Met His Thr Tyr Thr His Thr Pro Leu Ser His Arg Leu Thr Arg Val

```
  1                    5                      10                      15
Ser Leu Val Ser Leu Ser Tyr Ile His Thr His Thr Gln Pro Ala Thr
            20                      25                      30
Gly Pro Gln Arg Cys Leu Ser Leu Cys Pro Cys Leu Leu Ser Arg Thr
            35                      40                      45
His Thr His Thr Ser Gln Pro Gln Ala His Gln Ser Leu Ser Val Ser
            50                      55                      60
Leu Ser Leu Ser Leu Ser Leu Thr His Ile His Leu Ser His Arg Pro
65                      70                      75                      80
Thr Arg Val Ser Leu Leu Val Pro Gly Ser Ser Leu Ser His Thr Pro
            85                      90                      95
Thr His Thr His Thr Ala Gln Pro Gln Ala His Glu Gly Val Ser Leu
            100                     105                     110
Ser Leu Ser Leu Ser His Thr His Thr His Thr His Thr Pro Val Gln
            115                     120                     125
Leu His Arg Gly Leu Gly Gln Glu Thr Asp Leu Asn Thr His Thr Thr
            130                     135                     140
Leu Cys Cys Glu Trp Pro Leu Pro Ser Asn Asn
145                     150                     155
```

<210> 4219
<211> 774
<212> DNA
<213> Homo sapiens

<400> 4219
ngcggccgcg cacctgctcc cgtcgcccta cagcaagatc acgcccccgc ggaggcccca
60
ccgctgcagc agcggccacg gcagcgacaa cagcagcgtg ctgagcgggg agctcccgcc
120
ggccatgggg aagacggccc tgttctacca cagcggcggc agcagcggct acgagagcgt
180
gatgcgggac agcgaggcca ccggcagcgc gtcctcggcg caggactcca cgagcgagaa
240
cagcagctcc gtgggcggca ggtgccggag cctcaagacc ccgaagaaac gctccaatcc
300
aggttctcag agacggaggc ttatcccagc actatccctg acacctctt ccctgtgag
360
aaaaccccc aacagcacag gcgtccgctg ggtggatggn ncccttgcg gagcagcccg
420
aggggccttg gggaaccttt gagattaaag tctnatgaaa tcgatgacgt ggagcgcctg
480
cagcggcgac gagggggtgc cagcaaggag gccatgtgct tcaatgcaaa gctgaagatt
540
ctggacacc gccagcagag gatcgccgag gtccgcgcga gtacgagtg gctgatgaag
600
gagctggagg cgaccaaaca gtatctgatg ctggatccca acaagtggct cagtgaattt
660
gacttggagc aggtttggga gctggattcc ctggagtacc tggaggcact ggagtgtgtg
720
acggagcgcc tggagagccg tgtcaacttc tgcaaggccc atctcatgat gctc
774

<210> 4220
```

<211> 258
<212> PRT
<213> Homo sapiens

<400> 4220
Xaa Gly Arg Ala Pro Ala Pro Val Ala Leu Gln Gln Asp His Ala Pro
1   5   10   15
Ala Glu Ala Pro Pro Leu Gln Gln Arg Pro Arg Gln Arg Gln Gln Gln
            20   25   30
Arg Ala Glu Arg Gly Ala Pro Ala Gly His Gly Glu Asp Gly Pro Val
        35   40   45
Leu Pro Gln Arg Arg Gln Gln Arg Leu Arg Glu Arg Asp Ala Gly Gln
    50   55   60
Arg Gly His Arg Gln Arg Val Leu Gly Ala Gly Leu His Glu Arg Glu
65   70   75   80
Gln Gln Leu Arg Gly Arg Gln Val Pro Glu Pro Gln Asp Pro Glu Glu
                85   90   95
Thr Leu Gln Ser Arg Phe Ser Glu Thr Glu Ala Tyr Pro Ser Thr Ile
            100   105   110
Pro Gly His Leu Phe Pro Cys Glu Lys Thr Pro Gln Gln His Arg Arg
        115   120   125
Pro Leu Gly Gly Trp Xaa Pro Leu Arg Ser Ser Pro Arg Gly Leu Gly
    130   135   140
Glu Pro Leu Arg Leu Lys Ser Xaa Glu Ile Asp Asp Val Glu Arg Leu
145   150   155   160
Gln Arg Arg Arg Gly Gly Ala Ser Lys Glu Ala Met Cys Phe Asn Ala
                165   170   175
Lys Leu Lys Ile Leu Glu His Arg Gln Gln Arg Ile Ala Glu Val Arg
            180   185   190
Ala Lys Tyr Glu Trp Leu Met Lys Glu Leu Glu Ala Thr Lys Gln Tyr
            195   200   205
Leu Met Leu Asp Pro Asn Lys Trp Leu Ser Glu Phe Asp Leu Glu Gln
    210   215   220
Val Trp Glu Leu Asp Ser Leu Glu Tyr Leu Glu Ala Leu Glu Cys Val
225   230   235   240
Thr Glu Arg Leu Glu Ser Arg Val Asn Phe Cys Lys Ala His Leu Met
                245   250   255
Met Leu

<210> 4221
<211> 789
<212> DNA
<213> Homo sapiens

<400> 4221
aatgtgaaga ggattaaaga ataaagaaaa aacaaaaaag tcttatacta aaataagaaa
60
tcagccccat cttggcacag ttctcatgca gaatattgca cccagtgtga actaacgcta
120
gaagcttcaa actgtataaa tttaaatgta tttgcatatt ataaaaataa agataaacat
180
atacatattt tacactagtt atggaacagc aatgaacgtc agtcgatccc tctttcacat
240

3413

```
ttaacagaac tgaaatctga gtgctctaaa tactgccacc tgtactgtaa ctatggctta
300
tatgtgcacg gaaaacaaaa tccctgagaa gccattcgac tttttttttt tttcttttct
360
tcaagtagcg cgctccttgg aggatcacag ttctgaggtt caggttgtaa aacatttgct
420
ccatgttctc gtccatgctt cccccacca ccccctcccc acctcttccc cagtcgtcca
480
aaaagcaccc tgcaagcacg cgttgtcact caagttcaca gaacacgctg gggtgagtgc
540
agagggtctg ccaggtgcaa aagatggtcc aggtgttcag atgctctctt ttctccatgg
600
aaattccaca gccacaaacg tcactggttt ctgtgctttt caccaacatt cttcccttaa
660
aaattggtgc tcctaaagtc acagtttggg tacagtaaaa atgatggcat aaggaaaaga
720
agcactatct tttccactta attttccaag aaagtatgaa gatacttgga acaggggctg
780
atcacagtc
789


<210> 4222
<211> 127
<212> PRT
<213> Homo sapiens


<400> 4222
Met Ala Tyr Met Cys Thr Glu Asn Lys Ile Pro Glu Lys Pro Phe Asp
 1               5                  10                  15
Phe Phe Phe Phe Ser Phe Leu Gln Val Ala Arg Ser Leu Glu Asp His
            20                  25                  30
Ser Ser Glu Val Gln Val Val Lys His Leu Leu His Val Leu Val His
        35                  40                  45
Ala Ser Pro His His Pro Leu Pro Thr Ser Ser Pro Val Val Gln Lys
     50                  55                  60
Ala Pro Cys Lys His Ala Leu Ser Leu Lys Phe Thr Glu His Ala Gly
65                  70                  75                  80
Val Ser Ala Glu Gly Leu Pro Gly Ala Lys Asp Gly Pro Gly Val Gln
                85                  90                  95
Met Leu Ser Phe Leu His Gly Asn Ser Thr Ala Thr Asn Val Thr Gly
            100                 105                 110
Phe Cys Ala Phe His Gln His Ser Ser Leu Lys Asn Trp Cys Ser
        115                 120                 125


<210> 4223
<211> 852
<212> DNA
<213> Homo sapiens


<400> 4223
atcctggacc agggctacta ctcggagcga gacacaagca acgtggtacg gcaagtcctg
60
gaggccgtgg cctatttgca ctcactcaag atcgtgcaca ggaatctcaa gctggagaac
120
```

ctggtttact acaaccggct gaagaactcg aagattgtca tcagtgactt ccatctggct
180
aagctagaaa atggcctcat caaggagccc tgtgggaccc ccgaagattt tgcccccccaa
240
ggggaaggcc ggcagcggta tggacgccct gtggactgct gggccattgg agtcatcatg
300
tacatcctgc tttcaggcaa tccacctttc tatgaggagg tggaagaaga tgattatgag
360
aaccatgata agaatctctt ccgcaagatc ctggctggtg actatgagtt tgactctcca
420
tattgggatg atatttcgca ggcagccaaa gacctggtca caaggctgat ggaggtggag
480
caagaccagc ggatcactgc agaagaggcc atctcccatg agtggatttc tggcaatgct
540
gcttctgata agaacatcaa ggatggtgtc tgtgcccaga ttgaaaagaa ctttgccagg
600
gccaagtgga agaaggctgt ccgagtgacc accctcatga acggctccg ggcaccagag
660
cagtccagca cggctgcagc ccagtcggcc tcagccacag acactgccac ccccgggggct
720
gcagaccgta gtgccacccc agccacagat ggaagtgcca ccccagccac tgatggcagt
780
gtcaccccag ccaccgatgg aagcatcact ccagccattg atgggagtgt cacccccagcc
840
actgacagga gc
852

<210> 4224
<211> 284
<212> PRT
<213> Homo sapiens

<400> 4224
Ile Leu Asp Gln Gly Tyr Tyr Ser Glu Arg Asp Thr Ser Asn Val Val
1   5   10   15
Arg Gln Val Leu Glu Ala Val Ala Tyr Leu His Ser Leu Lys Ile Val
            20   25   30
His Arg Asn Leu Lys Leu Glu Asn Leu Val Tyr Tyr Asn Arg Leu Lys
        35   40   45
Asn Ser Lys Ile Val Ile Ser Asp Phe His Leu Ala Lys Leu Glu Asn
    50   55   60
Gly Leu Ile Lys Glu Pro Cys Gly Thr Pro Glu Asp Phe Ala Pro Gln
65   70   75   80
Gly Glu Gly Arg Gln Arg Tyr Gly Arg Pro Val Asp Cys Trp Ala Ile
                85   90   95
Gly Val Ile Met Tyr Ile Leu Leu Ser Gly Asn Pro Pro Phe Tyr Glu
                100   105   110
Glu Val Glu Glu Asp Asp Tyr Glu Asn His Asp Lys Asn Leu Phe Arg
            115   120   125
Lys Ile Leu Ala Gly Asp Tyr Glu Phe Asp Ser Pro Tyr Trp Asp Asp
        130   135   140
Ile Ser Gln Ala Ala Lys Asp Leu Val Thr Arg Leu Met Glu Val Glu
145   150   155   160
Gln Asp Gln Arg Ile Thr Ala Glu Glu Ala Ile Ser His Glu Trp Ile

```
                    165               170               175
Ser Gly Asn Ala Ala Ser Asp Lys Asn Ile Lys Asp Gly Val Cys Ala
            180               185               190
Gln Ile Glu Lys Asn Phe Ala Arg Ala Lys Trp Lys Lys Ala Val Arg
        195               200               205
Val Thr Thr Leu Met Lys Arg Leu Arg Ala Pro Glu Gln Ser Ser Thr
    210               215               220
Ala Ala Ala Gln Ser Ala Ser Ala Thr Asp Thr Ala Thr Pro Gly Ala
225               230               235               240
Ala Asp Arg Ser Ala Thr Pro Ala Thr Asp Gly Ser Ala Thr Pro Ala
            245               250               255
Thr Asp Gly Ser Val Thr Pro Ala Thr Asp Gly Ser Ile Thr Pro Ala
        260               265               270
Ile Asp Gly Ser Val Thr Pro Ala Thr Asp Arg Ser
    275               280
```

```
<210> 4225
<211> 470
<212> DNA
<213> Homo sapiens

<400> 4225
nntgtacaag aaagtgagcc agtcatcgtc aatattcaag tgatggatgc aaatgataac
60
acgccaacct tccctgaaat atcctatgat gtgtatgttt atacagacat gagacctggg
120
gacagggtcc tacagttaac tgcagtcgac gcagacgaag ggtcaaatgg ggagatcaca
180
tatgaaatcc ttgttggggc tcagggagac ttcatcatca ataaacaac agggcttatc
240
accatcgctc caggggtgga aatgatagtc gggcggactt acgcactccc ggtccaagca
300
gcggataatg ctcctcctgc aaagcaaagg actcccatct gcactgtgta tattgaagtg
360
cttccaccaa ataatcaaag ccctcctcgc ttcccacagc tgatgtatag ccttgaaatt
420
agtgaagcca tgagggttgg tgctgtttta ttaaatctac aggcaactga
470
```

```
<210> 4226
<211> 156
<212> PRT
<213> Homo sapiens

<400> 4226
```

```
Xaa Val Gln Glu Ser Glu Pro Val Ile Val Asn Ile Gln Val Met Asp
1               5               10              15
Ala Asn Asp Asn Thr Pro Thr Phe Pro Glu Ile Ser Tyr Asp Val Tyr
            20              25              30
Val Tyr Thr Asp Met Arg Pro Gly Asp Arg Val Leu Gln Leu Thr Ala
        35              40              45
Val Asp Ala Asp Glu Gly Ser Asn Gly Glu Ile Thr Tyr Glu Ile Leu
    50              55              60
Val Gly Ala Gln Gly Asp Phe Ile Ile Asn Lys Thr Thr Gly Leu Ile
```

```
65                    70                   75                   80
Thr Ile Ala Pro Gly Val Glu Met Ile Val Gly Arg Thr Tyr Ala Leu
                    85                   90                   95
Pro Val Gln Ala Ala Asp Asn Ala Pro Pro Ala Lys Gln Arg Thr Pro
            100                  105                  110
Ile Cys Thr Val Tyr Ile Glu Val Leu Pro Pro Asn Asn Gln Ser Pro
        115                  120                  125
Pro Arg Phe Pro Gln Leu Met Tyr Ser Leu Glu Ile Ser Glu Ala Met
    130                  135                  140
Arg Val Gly Ala Val Leu Leu Asn Leu Gln Ala Thr
145                  150                  155
```

```
<210> 4227
<211> 1199
<212> DNA
<213> Homo sapiens
```

```
<400> 4227
nnaagcttat ggccagtgtt aatttgttat ttcttaaata actttccctt tcatttttaa
60
attataaatt taacttctaa catgttttat ggttaaaatt gtactttttt cctttagcga
120
cattcaaatg catcacaatc actttgtgaa attgttcgcc tgagcagaga ccagatgtta
180
caaattcaga acagtacaga gcccgacccc ctgcttgcca ctctagaaaa gcaagaaatt
240
atagagcagc ttctatcaaa tattttccac aaggagaaaa atgagtcagc catagtcagt
300
gcaatccaga tattgctgac tttacttgag acacgacgac caacatttga aggccatata
360
gagatctgcc caccaggcat gagccattca gcttgttcag taaacaagag tgttctagaa
420
gccatcagag gaagacttgg atcttttcat gaactcctgc tggagccacc caagaaaagt
480
gtgatgaaga ccacatgggg tgtgctggat cctcctgtgg ggaatacccg gttgaatgtc
540
attaggttga tatccagcct gcttcaaacc aataccagca gtataaatgg ggaccttatg
600
gagctgaata gcattggagt catattgaac atgttcttca gtatacatg gaataacttt
660
ttgcatacac aagtggaaat ttgtattgca ctgattcttg caagtccttt tgaaaacaca
720
gaaaatgcca caattaccga tcaagactcc actggtgata atttgttatt aaaacatctt
780
ttccaaaaat gtcaattaat agaacgaata cttgaagcct gggaaatgaa tgagaagaaa
840
caggctgagg gaggaagacg gcatggttac atgggacacc taacgaggat agctaactgt
900
atcgtgcaca gcactgacaa gggcccaac agtgcattag tgcagcagct tatcaaaggt
960
aagttatttg tgaaatttga attacatttt tgttgggttg caggaaggat ttaagggtca
1020
agtagaaatg catgtagcat ttttaatagt gatttgtggg acttctttat atttggcaaa
1080
```

ttatgtattt gaatgaggtt cttgagaatg tgtttgaaca gggttgtttt ttgggttgta
1140
ttttatgttc atgtagttac agaccattcc ataagcattg gcaggcttgg ctggattca
1199

<210> 4228
<211> 298
<212> PRT
<213> Homo sapiens

<400> 4228
Arg His Ser Asn Ala Ser Gln Ser Leu Cys Glu Ile Val Arg Leu Ser
 1   5   10   15
Arg Asp Gln Met Leu Gln Ile Gln Asn Ser Thr Glu Pro Asp Pro Leu
                20   25   30
Leu Ala Thr Leu Glu Lys Gln Glu Ile Ile Glu Gln Leu Leu Ser Asn
            35   40   45
Ile Phe His Lys Glu Lys Asn Glu Ser Ala Ile Val Ser Ala Ile Gln
        50   55   60
Ile Leu Leu Thr Leu Leu Glu Thr Arg Arg Pro Thr Phe Glu Gly His
65   70   75   80
Ile Glu Ile Cys Pro Pro Gly Met Ser His Ser Ala Cys Ser Val Asn
                85   90   95
Lys Ser Val Leu Glu Ala Ile Arg Gly Arg Leu Gly Ser Phe His Glu
            100   105   110
Leu Leu Leu Glu Pro Pro Lys Lys Ser Val Met Lys Thr Thr Trp Gly
            115   120   125
Val Leu Asp Pro Pro Val Gly Asn Thr Arg Leu Asn Val Ile Arg Leu
        130   135   140
Ile Ser Ser Leu Leu Gln Thr Asn Thr Ser Ser Ile Asn Gly Asp Leu
145   150   155   160
Met Glu Leu Asn Ser Ile Gly Val Ile Leu Asn Met Phe Phe Lys Tyr
                165   170   175
Thr Trp Asn Asn Phe Leu His Thr Gln Val Glu Ile Cys Ile Ala Leu
                180   185   190
Ile Leu Ala Ser Pro Phe Glu Asn Thr Glu Asn Ala Thr Ile Thr Asp
            195   200   205
Gln Asp Ser Thr Gly Asp Asn Leu Leu Leu Lys His Leu Phe Gln Lys
        210   215   220
Cys Gln Leu Ile Glu Arg Ile Leu Glu Ala Trp Glu Met Asn Glu Lys
225   230   235   240
Lys Gln Ala Glu Gly Gly Arg Arg His Gly Tyr Met Gly His Leu Thr
                245   250   255
Arg Ile Ala Asn Cys Ile Val His Ser Thr Asp Lys Gly Pro Asn Ser
                260   265   270
Ala Leu Val Gln Gln Leu Ile Lys Gly Lys Leu Phe Val Lys Phe Glu
        275   280   285
Leu His Phe Cys Trp Val Ala Gly Arg Ile
    290   295

<210> 4229
<211> 1612
<212> DNA
<213> Homo sapiens

<400> 4229
ncgggggtct ccatcctgga ccaggacctg gactacctgt ccgaaggcct cgaaggccga
60
tcccaaagcc ccgtggccct gctctttgat gcccttctac gcccagacac agactttggg
120
ggaaacatga agtcggtcct cacctggaag caccggaagg agcacgccat ccccccacgtg
180
gttctgggcc ggaacctccc cggggggagcc tggcactcca tcgaaggctc catggtgatc
240
ctgagccaag gccagtggat ggggctcccg gacctggagg tcaaggactg gatgcagaag
300
aagcgaagag gtcttcgcaa cagccgggcc actgccgggg acatcgccca ctactacagg
360
gactacgtgg tcaagaaggg tctggggcat aactttgtgt ccggtgctgt agtcacagcc
420
gtggagtggg ggacccccga tcccagcagc tgtgggggccc aggactccag ccccctcttc
480
caggtgagcg gcttcctgac caggaaccag gcccagcagc ccttctcgct gtgggcccgc
540
aacgtggtcc tcgccacagg cacgttcgac agcccggccc ggctgggcat ccccgggggag
600
gccctgccct tcatccacca tgagctgtct gccctggagg ccgccacaag ggtgggtgcg
660
gtgacccccg gcctcagaccc tgtcctcatc attggcgcgg ggctgtcagc ggccgacgcc
720
gtcctctacg cccgccacta acatcccg gtgatccatg ccttccgccg ggccgtggac
780
gaccctggcc tggtgttcaa ccagctgccc aagatgctgt accccgagta ccacaaggtg
840
caccagatga tgcgggagca gtccatcctg tcgcccagcc cctatgaggg ttaccgcagc
900
ctccccaggc accagctgct gtgcttcaag gaagactgcc aggccgtgtt ccaggacctc
960
gagggtgtcg agaaggtgtt tggggtctcc ctggtgctgg tcctcatcgg ctcccacccc
1020
gacctctcct tcctgcctgg ggcaggggct gactttgcag tggatcctga ccagccgctg
1080
agcgccaaga ggaacccccat tgacgtggac cccttcacct accagagcac ccgccaggag
1140
ggcctgtacg ccatggggcc gctggccggg gacaacttcg tgaggtttgt gcagggggggc
1200
gccttggctg tggccagctc cctgctaagg aaggagacca ggaagccacc ctaacactcg
1260
gccagacccg ctggctccca ggccctgaga ggacagagat gaccacatcc ctgctggatg
1320
caggacccgt ccaaagatgc cccgggggagg ggtgtcagcc cacgttgctg gcctttgggg
1380
tcaagaggag tagggatccc aggctgccct ggacttagac cagtgtctga ggttggactt
1440
agaccagtgt gtgaggtggt aacagcggcc gcagcagggg gttggcctag acctgggatt
1500
tgtgggggaaa gctgctggtg tgaccagctg agcacccagc caggagacct gcagccctgc
1560

3419

gccttccaga agcaggtccc aaataaagcc agtgcccacc tgaaaaaaaa aa
1612

<210> 4230
<211> 417
<212> PRT
<213> Homo sapiens

<400> 4230
Xaa Gly Val Ser Ile Leu Asp Gln Asp Leu Asp Tyr Leu Ser Glu Gly
 1   5   10   15
Leu Glu Gly Arg Ser Gln Ser Pro Val Ala Leu Leu Phe Asp Ala Leu
            20   25   30
Leu Arg Pro Asp Thr Asp Phe Gly Gly Asn Met Lys Ser Val Leu Thr
        35   40   45
Trp Lys His Arg Lys Glu His Ala Ile Pro His Val Val Leu Gly Arg
    50   55   60
Asn Leu Pro Gly Gly Ala Trp His Ser Ile Glu Gly Ser Met Val Ile
65   70   75   80
Leu Ser Gln Gly Gln Trp Met Gly Leu Pro Asp Leu Glu Val Lys Asp
                85   90   95
Trp Met Gln Lys Lys Arg Arg Gly Leu Arg Asn Ser Arg Ala Thr Ala
            100   105   110
Gly Asp Ile Ala His Tyr Tyr Arg Asp Tyr Val Val Lys Lys Gly Leu
        115   120   125
Gly His Asn Phe Val Ser Gly Ala Val Val Thr Ala Val Glu Trp Gly
    130   135   140
Thr Pro Asp Pro Ser Ser Cys Gly Ala Gln Asp Ser Ser Pro Leu Phe
145   150   155   160
Gln Val Ser Gly Phe Leu Thr Arg Asn Gln Ala Gln Gln Pro Phe Ser
                165   170   175
Leu Trp Ala Arg Asn Val Val Leu Ala Thr Gly Thr Phe Asp Ser Pro
            180   185   190
Ala Arg Leu Gly Ile Pro Gly Glu Ala Leu Pro Phe Ile His His Glu
        195   200   205
Leu Ser Ala Leu Glu Ala Ala Thr Arg Val Gly Ala Val Thr Pro Ala
    210   215   220
Ser Asp Pro Val Leu Ile Ile Gly Ala Gly Leu Ser Ala Ala Asp Ala
225   230   235   240
Val Leu Tyr Ala Arg His Tyr Asn Ile Pro Val Ile His Ala Phe Arg
                245   250   255
Arg Ala Val Asp Asp Pro Gly Leu Val Phe Asn Gln Leu Pro Lys Met
            260   265   270
Leu Tyr Pro Glu Tyr His Lys Val His Gln Met Met Arg Glu Gln Ser
        275   280   285
Ile Leu Ser Pro Ser Pro Tyr Glu Gly Tyr Arg Ser Leu Pro Arg His
    290   295   300
Gln Leu Leu Cys Phe Lys Glu Asp Cys Gln Ala Val Phe Gln Asp Leu
305   310   315   320
Glu Gly Val Glu Lys Val Phe Gly Val Ser Leu Val Leu Val Leu Ile
                325   330   335
Gly Ser His Pro Asp Leu Ser Phe Leu Pro Gly Ala Gly Ala Asp Phe
            340   345   350
Ala Val Asp Pro Asp Gln Pro Leu Ser Ala Lys Arg Asn Pro Ile Asp

3420

```
           355                    360                    365
Val Asp Pro Phe Thr Tyr Gln Ser Thr Arg Gln Glu Gly Leu Tyr Ala
      370                    375                    380
Met Gly Pro Leu Ala Gly Asp Asn Phe Val Arg Phe Val Gln Gly Gly
385                    390                    395                    400
Ala Leu Ala Val Ala Ser Ser Leu Leu Arg Lys Glu Thr Arg Lys Pro
                  405                    410                    415
Pro
```

```
<210> 4231
<211> 1588
<212> DNA
<213> Homo sapiens

<400> 4231
ncgactacag acacagacgg tgccgccgag acttgtgtct cagtacagtg tcagaagcaa
60
attaaagaac ttcgagatca aattgtatct gttcaggagg aaaagaagat tttagccatt
120
gagctggaaa atctcaagag caaactcgta gaagtaattg aagaagtaaa taaagttaaa
180
caagaaaaga ctgttttaaa ttcagaagtt cttgaacaga gaaaagtctt agaaaaatgc
240
aatagagtgt ccatgttagc tgtagaagag tatgaggaga tgcaagtaaa cctggagctg
300
gagaaggacc ttcgaaagaa agcagagtca tttgcccaag agatgttcct tgagccaaac
360
cagggtaaaa agacaaagcc cccctttggg cggcagagtt ccatccttga tcagcagtta
420
gctttagacg aaaatgcaaa actcacccag caacttgaag aagagagaat tcagcatcaa
480
caaaaggtca agaattaga gagcaacta gaaaatgaaa cactccacaa agaaatacac
540
aacctcaaac agcaactgga gcttctagag gaagataaaa aggaattgga attgaaatat
600
cagaattctg aagagaaagc cagaaattta aagcactctg ttgatgaact ccagaaacga
660
gtgaaccagt ctgagaattc agtacctcca ccacctcctc ctccaccacc acttcccccct
720
ccacctccca atcctatccg atccctcatg tccatgatcc ggaaacgatc ccaccccagt
780
ggcagtggtg ctaagaaaga aaaggcaact caaccagaaa caactgaaga agtcacagat
840
ctaaagaggc aagcagttga agagatgatg gatagaatta aaaagggagt tcatcttaga
900
cccgttaatc agacagccag accgaagaca agccagaat cttcgaaagg ctgcgaaagt
960
gcagtggatg aactaaaagg aatactgggg acacttaaca aatccactag ttcaagaagc
1020
ttaaaatccc ttgaccctga aaacagtgaa actgagttag aaaggatttt gcgtcgcaga
1080
aaggtgacag cagaagcaga tagcagtagt ccaactggga tattagccac ctcagagtcc
1140
```

```
aaatccatgc cagtgttggg ttctgtatcc agtgtaacaa aaacagcctt gaacaagaaa
1200
actctggagg cagaattcaa cagcccgtcc cccccaacac ctgagccagg tgaagggccc
1260
cgtaaattgg aaggatgcac aagttccaag gttacgtttc agtaagtaac gatgctcttt
1320
actaagtggt gtatagaaga atctgtaatg actaacttgt gtgtttcttt gatttgtttc
1380
ctttagagag attttgattg gctcgccggt aaattctctt cttctttttca tttgatgggc
1440
cagcttttttc attctaggct cctagataag agatctaatt aagatccaaa gcaagtacca
1500
tgtacaaaga gaattacttc ccctaaactg gtttggtaat caggttctta tacacaaata
1560
attgatctgg atgatacaga ctctgcag
1588
```

```
<210> 4232
<211> 434
<212> PRT
<213> Homo sapiens
```

```
<400> 4232
Xaa Thr Thr Asp Thr Asp Gly Ala Ala Glu Thr Cys Val Ser Val Gln
1               5                   10                  15
Cys Gln Lys Gln Ile Lys Glu Leu Arg Asp Gln Ile Val Ser Val Gln
            20                  25                  30
Glu Glu Lys Lys Ile Leu Ala Ile Glu Leu Glu Asn Leu Lys Ser Lys
        35                  40                  45
Leu Val Glu Val Ile Glu Glu Val Asn Lys Val Lys Gln Glu Lys Thr
    50                  55                  60
Val Leu Asn Ser Glu Val Leu Glu Gln Arg Lys Val Leu Glu Lys Cys
65                  70                  75                  80
Asn Arg Val Ser Met Leu Ala Val Glu Glu Tyr Glu Glu Met Gln Val
                85                  90                  95
Asn Leu Glu Leu Glu Lys Asp Leu Arg Lys Lys Ala Glu Ser Phe Ala
            100                 105                 110
Gln Glu Met Phe Leu Glu Pro Asn Gln Gly Lys Lys Thr Lys Pro Pro
        115                 120                 125
Phe Gly Arg Gln Ser Ser Ile Leu Asp Gln Gln Leu Ala Leu Asp Glu
    130                 135                 140
Asn Ala Lys Leu Thr Gln Gln Leu Glu Glu Glu Arg Ile Gln His Gln
145                 150                 155                 160
Gln Lys Val Lys Glu Leu Glu Glu Gln Leu Glu Asn Glu Thr Leu His
                165                 170                 175
Lys Glu Ile His Asn Leu Lys Gln Gln Leu Glu Leu Leu Glu Glu Asp
            180                 185                 190
Lys Lys Glu Leu Glu Leu Lys Tyr Gln Asn Ser Glu Glu Lys Ala Arg
        195                 200                 205
Asn Leu Lys His Ser Val Asp Glu Leu Gln Lys Arg Val Asn Gln Ser
    210                 215                 220
Glu Asn Ser Val Pro Pro Pro Pro Pro Pro Pro Pro Leu Pro Pro
225                 230                 235                 240
Pro Pro Pro Asn Pro Ile Arg Ser Leu Met Ser Met Ile Arg Lys Arg
```

3422

```
                    245                   250                   255
Ser His Pro Ser Gly Ser Gly Ala Lys Lys Glu Lys Ala Thr Gln Pro
                260                   265                   270
Glu Thr Thr Glu Glu Val Thr Asp Leu Lys Arg Gln Ala Val Glu Glu
                275                   280                   285
Met Met Asp Arg Ile Lys Lys Gly Val His Leu Arg Pro Val Asn Gln
        290                   295                   300
Thr Ala Arg Pro Lys Thr Lys Pro Glu Ser Ser Lys Gly Cys Glu Ser
305                   310                   315                   320
Ala Val Asp Glu Leu Lys Gly Ile Leu Gly Thr Leu Asn Lys Ser Thr
                325                   330                   335
Ser Ser Arg Ser Leu Lys Ser Leu Asp Pro Glu Asn Ser Glu Thr Glu
                340                   345                   350
Leu Glu Arg Ile Leu Arg Arg Arg Lys Val Thr Ala Glu Ala Asp Ser
                355                   360                   365
Ser Ser Pro Thr Gly Ile Leu Ala Thr Ser Glu Ser Lys Ser Met Pro
        370                   375                   380
Val Leu Gly Ser Val Ser Ser Val Thr Lys Thr Ala Leu Asn Lys Lys
385                   390                   395                   400
Thr Leu Glu Ala Glu Phe Asn Ser Pro Ser Pro Pro Thr Pro Glu Pro
                405                   410                   415
Gly Glu Gly Pro Arg Lys Leu Glu Gly Cys Thr Ser Ser Lys Val Thr
        420                   425                   430
Phe Gln
```

```
<210> 4233
<211> 2827
<212> DNA
<213> Homo sapiens

<400> 4233
ggatccctga aaggagacca tatactgtac catttgatac tcatttgggg cattatattt
60
atatcccatc aagacaagat tccaggaggg ggaatcactt gcaaggtcca cacaagtccg
120
cctatgtact ctctggatcg aatatttgct ggatttcgaa cacgaagtca gatgctgttg
180
ggtcacatag aagaacaaga taaggtcctc cactgccaat tttctgataa cagtgatgat
240
gaagaatcag aaggccaaga gaaatctgga actagatgta gaagtcgttc atggattcag
300
aagccagact ctgtttgttc ccttgttgaa ttgagtgata ctcaggatga aacacaaaag
360
tcagatttgg agaatgaaga tttaaagatt gattgtctcc aggagagtca agaattgaat
420
ttgcaaaaat taaagaattc agaacgcata cttactgaag ccaaacaaaa aatgagagaa
480
cttacagtta acatcaagat gaaggaagat ctgattaaag aattaataaa aacaggtaac
540
gatgccaagt ctgtaagcaa gcagtatact ttgaaagtaa caaagctaga gcatgatgca
600
gaacaggcaa aagtcgaact aactgaaaca caaaagcagc tacaggagct ggaaaacaaa
660
```

```
gatctttctg atgttgcaat gaaggtaaaa ttacagaaag agtttcgtaa aaaggtggat
720
gctgcaaagc tgagagttca ggtcttacag aagaagcaac aagatagtaa gaaactggca
780
tcactgtcaa tccaaaatga gaaacgtgct aatgaactag agcagagtgt agatcacatg
840
aaatatcaaa agatacagct acaaagaaaa ctacgagaag aaaatgaaaa aaggaagcaa
900
ctggatgcag taattaagcg ggaccagcaa aaaatcaaag taatacaatt aaaaacagga
960
caggaagaag gtctaaaacc gaaagctgag gaccttgatg catgtaactt gaaaaggaga
1020
aaaggttcgt ttggaagtat agaccatctc cagaaattgg atgagcaaaa gaaatggtta
1080
gatgaagaag tagagaaagt tctgaaccaa cgccaagaat tagaggagct ggaagcagac
1140
ttaaagaaac gggaggccat agtttctaag aaggaggctc tgttacagga gaagagtcac
1200
ctggaaaata agaaattgag atctagtcag gccttaaaca cagatagttt gaaaatatca
1260
actcgcctga acttactgga acaagagttg tctgaaaaga atgtgcagct ccagaccagt
1320
acagctgagg agaaaacaaa gatttcagaa caagttgaag tcctccagaa agaaaaggat
1380
cagctccaga aacgcagaca cgatgtggat gaaaaactta aaaatggtag agtgttatca
1440
cctgaagaag aacatgttct tttccaactt gaagaaggga tagaagcttt ggaagctgca
1500
attgaataca ggaatgaaag tatccagaat cgccagaagt cacttagagc atcattccat
1560
aacctctctc gtggtgaagc aaatgtcttg gaaaagctag cttgcctgag tcctgttgag
1620
attagaacta ttcttttcag atatttcaat aaggtggtga atttgcgaga agctgaacgg
1680
aaacaacagt tatataatga agaaatgaaa atgaaagttc tggaacggga taatatggtt
1740
cgtgaattag aatctgcact ggaccatcta aaattgcagt gtgaccggag actgaccctc
1800
cagcaaaagg aacacgaaca aagatgcag ttgctattac atcatttcaa agaacaagat
1860
ggagaaggca ttatggaaac tttcaaaaca tatgaagata aaatccagca gttggaaaaa
1920
gatctttatt tctataagaa aaccagccgg gatcataaga agaaacttaa ggaactggta
1980
ggggaagcaa ttcggcggca actagcatca tcagagtatc aagaggctgg agatggagtc
2040
ctgaagccag aaggaggagg catgctttca gaagaattaa aatgggcatc cagacctgaa
2100
agtatgaaat taagtggaag agaaagagaa atggacagtt cagcaagcag cttaagaaca
2160
cagccaaatc ctcaaaagct ctgggaagat atcccagaat tacctccaat tcatagttct
2220
ttagcacccc ccagtgggca tatgttaggt aatgagaata aaacagaaac agatgataat
2280
```

```
cagtttacaa aatctcacag tcgactgtca tcccaaattc aggttgtggg aaatgtggga
2340
cgacttcatg gtgtcacacc tgtaaaactg tgtcgaaaag aattacgtca aatttccgcc
2400
ttggaactat cattgcgacg ttccagtctt ggagttggca ttggatcaat ggctgctgat
2460
tccatcgaag tatctaggaa accaagggac ttaaaaactt agacattgaa taatagaact
2520
tttagtagat atgtaaaaag attccttttt ctaacctgtt aaaaactaaa gctcaagttc
2580
actacctctt tcctcagaat aaaggaagaa ggggaggaag gaatccctaa ttcttttata
2640
tgctatagat gtgtacatct ctatatata tttggggagt tttagtttat attcccatag
2700
taatcaaaca tgttttccaa tacttgataa catttaaata tttataaata cgcttaaatg
2760
tttttccagg catatttgaa gattaaaact agtaatagac taaaaaaaaa aaaaaaaaa
2820
aaaaaag
2827


<210> 4234
<211> 833
<212> PRT
<213> Homo sapiens

<400> 4234
Gly Ser Leu Lys Gly Asp His Ile Leu Tyr His Leu Ile Leu Ile Trp
 1               5                   10                  15
Gly Ile Ile Phe Ile Ser His Gln Asp Lys Ile Pro Gly Gly Gly Ile
            20                  25                  30
Thr Cys Lys Val His Thr Ser Pro Pro Met Tyr Ser Leu Asp Arg Ile
        35                  40                  45
Phe Ala Gly Phe Arg Thr Arg Ser Gln Met Leu Leu Gly His Ile Glu
    50                  55                  60
Glu Gln Asp Lys Val Leu His Cys Gln Phe Ser Asp Asn Ser Asp Asp
65                  70                  75                  80
Glu Glu Ser Glu Gly Gln Glu Lys Ser Gly Thr Arg Cys Arg Ser Arg
                85                  90                  95
Ser Trp Ile Gln Lys Pro Asp Ser Val Cys Ser Leu Val Glu Leu Ser
            100                 105                 110
Asp Thr Gln Asp Glu Thr Gln Lys Ser Asp Leu Glu Asn Glu Asp Leu
            115                 120                 125
Lys Ile Asp Cys Leu Gln Glu Ser Gln Glu Leu Asn Leu Gln Lys Leu
    130                 135                 140
Lys Asn Ser Glu Arg Ile Leu Thr Glu Ala Lys Gln Lys Met Arg Glu
145                 150                 155                 160
Leu Thr Val Asn Ile Lys Met Lys Glu Asp Leu Ile Lys Glu Leu Ile
                165                 170                 175
Lys Thr Gly Asn Asp Ala Lys Ser Val Ser Lys Gln Tyr Thr Leu Lys
                180                 185                 190
Val Thr Lys Leu Glu His Asp Ala Glu Gln Ala Lys Val Glu Leu Thr
            195                 200                 205
Glu Thr Gln Lys Gln Leu Gln Glu Leu Glu Asn Lys Asp Leu Ser Asp
```

```
        210                    215                    220
Val Ala Met Lys Val Lys Leu Gln Lys Glu Phe Arg Lys Lys Val Asp
225                    230                    235                    240
Ala Ala Lys Leu Arg Val Gln Val Leu Gln Lys Lys Gln Gln Asp Ser
                245                    250                    255
Lys Lys Leu Ala Ser Leu Ser Ile Gln Asn Glu Lys Arg Ala Asn Glu
                260                    265                    270
Leu Glu Gln Ser Val Asp His Met Lys Tyr Gln Lys Ile Gln Leu Gln
                275                    280                    285
Arg Lys Leu Arg Glu Glu Asn Glu Lys Arg Lys Gln Leu Asp Ala Val
                290                    295                    300
Ile Lys Arg Asp Gln Gln Lys Ile Lys Val Ile Gln Leu Lys Thr Gly
305                    310                    315                    320
Gln Glu Glu Gly Leu Lys Pro Lys Ala Glu Asp Leu Asp Ala Cys Asn
                325                    330                    335
Leu Lys Arg Arg Lys Gly Ser Phe Gly Ser Ile Asp His Leu Gln Lys
                340                    345                    350
Leu Asp Glu Gln Lys Lys Trp Leu Asp Glu Glu Val Glu Lys Val Leu
                355                    360                    365
Asn Gln Arg Gln Glu Leu Glu Glu Leu Glu Ala Asp Leu Lys Lys Arg
                370                    375                    380
Glu Ala Ile Val Ser Lys Lys Glu Ala Leu Leu Gln Glu Lys Ser His
385                    390                    395                    400
Leu Glu Asn Lys Lys Leu Arg Ser Ser Gln Ala Leu Asn Thr Asp Ser
                405                    410                    415
Leu Lys Ile Ser Thr Arg Leu Asn Leu Leu Glu Gln Glu Leu Ser Glu
                420                    425                    430
Lys Asn Val Gln Leu Gln Thr Ser Thr Ala Glu Glu Lys Thr Lys Ile
                435                    440                    445
Ser Glu Gln Val Glu Val Leu Gln Lys Glu Lys Asp Gln Leu Gln Lys
                450                    455                    460
Arg Arg His Asp Val Asp Glu Lys Leu Lys Asn Gly Arg Val Leu Ser
465                    470                    475                    480
Pro Glu Glu Glu His Val Leu Phe Gln Leu Glu Glu Gly Ile Glu Ala
                485                    490                    495
Leu Glu Ala Ala Ile Glu Tyr Arg Asn Glu Ser Ile Gln Asn Arg Gln
                500                    505                    510
Lys Ser Leu Arg Ala Ser Phe His Asn Leu Ser Arg Gly Glu Ala Asn
                515                    520                    525
Val Leu Glu Lys Leu Ala Cys Leu Ser Pro Val Glu Ile Arg Thr Ile
                530                    535                    540
Leu Phe Arg Tyr Phe Asn Lys Val Val Asn Leu Arg Glu Ala Glu Arg
545                    550                    555                    560
Lys Gln Gln Leu Tyr Asn Glu Glu Met Lys Met Lys Val Leu Glu Arg
                565                    570                    575
Asp Asn Met Val Arg Glu Leu Glu Ser Ala Leu Asp His Leu Lys Leu
                580                    585                    590
Gln Cys Asp Arg Arg Leu Thr Leu Gln Gln Lys Glu His Glu Gln Lys
                595                    600                    605
Met Gln Leu Leu Leu His His Phe Lys Glu Gln Asp Gly Glu Gly Ile
                610                    615                    620
Met Glu Thr Phe Lys Thr Tyr Glu Asp Lys Ile Gln Gln Leu Glu Lys
625                    630                    635                    640
Asp Leu Tyr Phe Tyr Lys Lys Thr Ser Arg Asp His Lys Lys Lys Leu
```

```
                    645                    650                    655
Lys Glu Leu Val Gly Glu Ala Ile Arg Arg Gln Leu Ala Ser Ser Glu
                660                    665                    670
Tyr Gln Glu Ala Gly Asp Gly Val Leu Lys Pro Glu Gly Gly Gly Met
                675                    680                    685
Leu Ser Glu Glu Leu Lys Trp Ala Ser Arg Pro Glu Ser Met Lys Leu
            690                    695                    700
Ser Gly Arg Glu Arg Glu Met Asp Ser Ser Ala Ser Ser Leu Arg Thr
705                    710                    715                    720
Gln Pro Asn Pro Gln Lys Leu Trp Glu Asp Ile Pro Glu Leu Pro Pro
                725                    730                    735
Ile His Ser Ser Leu Ala Pro Pro Ser Gly His Met Leu Gly Asn Glu
                740                    745                    750
Asn Lys Thr Glu Thr Asp Asp Asn Gln Phe Thr Lys Ser His Ser Arg
            755                    760                    765
Leu Ser Ser Gln Ile Gln Val Val Gly Asn Val Gly Arg Leu His Gly
        770                    775                    780
Val Thr Pro Val Lys Leu Cys Arg Lys Glu Leu Arg Gln Ile Ser Ala
785                    790                    795                    800
Leu Glu Leu Ser Leu Arg Arg Ser Ser Leu Gly Val Gly Ile Gly Ser
                805                    810                    815
Met Ala Ala Asp Ser Ile Glu Val Ser Arg Lys Pro Arg Asp Leu Lys
                820                    825                    830
Thr
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<210> 4235
<211> 971
<212> DNA
<213> Homo sapiens

<400> 4235
ngacagcgag cgggggcgac ttgccaataa agttaggctc caacagctgc tgttgccacc
60
accactagtt caagcaccat gcagtttacc tcaatatcaa attctttgac ctccactgct
120
gctattgggc tctcatttac aacttcaacg actaccaccg ccactttcac caccaacact
180
actaccacaa tcaccagtgg ctttactgtg aaccaaaacc aactgttatc aagagggttt
240
gaaaaccttg taccttatac ttcaactgtt agtgtagtag caactcctgt gatgacatat
300
ggtcatctgg agggtcttat aaatgagtgg aaccttgagc tggaagatca agagaagtac
360
tttcttctcc aggccactca ggtcaatgct tgggaccata cattgattga gaatggtgag
420
atgattcgta ttttacatgg agaagtgaac aaagtgaaac tggatcagaa aagattggaa
480
caagaattgg attttatcct gtcacagcag caggaactag aatttctgtt gacttattta
540
gaggagtcta cgcgtgacca gagtggactt cattatctgc aggatgcaga tgaggagcat
600
gtggagatct ccaccagatc tgcagaattc tgaatgccca tatggactcc ctgcagtgga
660
```

ttgatcggaa ttcaggcatg ctgcgaagga aggtagaagt ggtaacacgg gttttcgagg
720
attatcgtca cgaggagcat gcacacaatg tcaacactgc tttttagtga atgaccatat
780
cttcagcatg tcgtttctgg attattacct acaaattctg atgttaaata gagtagtatt
840
tatacttaat atttcatctt gatcataatg aattgtgcat ccttttttc atttaagtat
900
tgtactgttg agaattatac cttagttttg tttttagtat tagaaaatca aaattatact
960
agccccctttg t
971

<210> 4236
<211> 198
<212> PRT
<213> Homo sapiens

<400> 4236
Ala Pro Thr Ala Ala Val Ala Thr Thr Thr Ser Ser Ser Thr Met Gln
1   5   10   15
Phe Thr Ser Ile Ser Asn Ser Leu Thr Ser Thr Ala Ala Ile Gly Leu
            20   25   30
Ser Phe Thr Thr Ser Thr Thr Thr Thr Ala Thr Phe Thr Thr Asn Thr
        35   40   45
Thr Thr Thr Ile Thr Ser Gly Phe Thr Val Asn Gln Asn Gln Leu Leu
    50   55   60
Ser Arg Gly Phe Glu Asn Leu Val Pro Tyr Thr Ser Thr Val Ser Val
65   70   75   80
Val Ala Thr Pro Val Met Thr Tyr Gly His Leu Glu Gly Leu Ile Asn
                85   90   95
Glu Trp Asn Leu Glu Leu Glu Asp Gln Glu Lys Tyr Phe Leu Leu Gln
            100   105   110
Ala Thr Gln Val Asn Ala Trp Asp His Thr Leu Ile Glu Asn Gly Glu
        115   120   125
Met Ile Arg Ile Leu His Gly Glu Val Asn Lys Val Lys Leu Asp Gln
    130   135   140
Lys Arg Leu Glu Gln Glu Leu Asp Phe Ile Leu Ser Gln Gln Gln Glu
145   150   155   160
Leu Glu Phe Leu Leu Thr Tyr Leu Glu Glu Ser Thr Arg Asp Gln Ser
                165   170   175
Gly Leu His Tyr Leu Gln Asp Ala Asp Glu Glu His Val Glu Ile Ser
                180   185   190
Thr Arg Ser Ala Glu Phe
            195

<210> 4237
<211> 560
<212> DNA
<213> Homo sapiens

<400> 4237
cccaggtggc aggctgctgg tggtccctgt ccatgctgtc gacacgcctc acgctgctgc
60

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tgatggtggc cacaccagcc ctgatgggag tgggcaccct gatgggctca ggcctccgaa
120
aattgtctcg ccagtgtcag gagcaggtac cggcattcct ggccatcctc ttcaccctcc
180
ccacaccgtt tctctttcca ctccccggaa ctcctccctg tccccatcct ggactccttg
240
tcctgttttt tggactcctt gtcctgtttc ctggactcct tgcagatcgc cagggcaatg
300
ggcgtagcag acgaggccct gggcaatgtg cggactgtgc gtgccttcgc catggagcaa
360
cgggaagagg agcgctatgg ggcagagctg gaagcctgcc gctgccgagc agaggagctg
420
ggccgcggca tcgccttgtt ccaagggctt ccaacatcg ccttcaactg tgagtgagcc
480
atttgggggc tggagggggcg cttgtgggct ggggaggagc tgggagcagc caaggcaggc
540
aaggccctcc cttcacgcgt
560
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<210> 4238
<211> 124
<212> PRT
<213> Homo sapiens

<400> 4238

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Trp Ala Gln Ala Ser Glu Asn Cys Leu Ala Ser Val Arg Ser Arg Tyr
 1               5                  10                  15
Arg His Ser Trp Pro Ser Ser Ser Pro Ser Pro His Arg Phe Ser Phe
            20                  25                  30
His Ser Pro Glu Leu Leu Pro Val Pro Ile Leu Asp Ser Leu Ser Cys
        35                  40                  45
Phe Leu Asp Ser Leu Ser Cys Phe Leu Asp Ser Leu Gln Ile Ala Arg
    50                  55                  60
Ala Met Gly Val Ala Asp Glu Ala Leu Gly Asn Val Arg Thr Val Arg
65                  70                  75                  80
Ala Phe Ala Met Glu Gln Arg Glu Glu Glu Arg Tyr Gly Ala Glu Leu
                85                  90                  95
Glu Ala Cys Arg Cys Arg Ala Glu Glu Leu Gly Arg Gly Ile Ala Leu
               100                 105                 110
Phe Gln Gly Leu Ser Asn Ile Ala Phe Asn Cys Glu
           115                 120
```

<210> 4239
<211> 3127
<212> DNA
<213> Homo sapiens

<400> 4239

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nngaaagggg aaggggagtt gggagaggca cctcaacttt gatgtcccga gccttgagtg
60
gccactcgca agctggccaa gggcttcaca caatttgcca agatgacaga ggggaccaag
120
aagaccagca aaagttcaa gttcttcaag ttcaagggct ttgggagtct ctccaacctc
180
```

3429

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cctcggtcct tcactctgag acgatcctca gcttccatca gtaggcagtc ccatttggag
240
cctgacacct ttgaagccac gcaggatgac atggtgacgg tgcccaagag tcccccagcc
300
tatgcccgct ccagtgacat gtacagccac atgggcacca tgcctcgccc cagcatcaag
360
aaagcacaga actcacaggc tgcccggcag gcccaggagg cgggtcccaa gcccaacttg
420
gtacccggag gtgtacccga ccccccaggc ttggaggcag ccaaagaggt gatggtgaag
480
gccactggcc ctctagagga cacccccagca atggaaccca accccttcagc agtggaggta
540
gaccccatca gaaagcctga ggtccccaca ggagacgtag aagaggagag acctcccagg
600
gacgtgcact cagaaagggc tgctggagag ccagaggctg gcagcgacta tgtgaagttc
660
tccaaggaga agtacatcct ggactcatcg ccagagaaac tccacaagga attggaggag
720
gagctcaaac tcagcagcac ggatctccgc agccatgcct ggtaccatgg ccgcatcccc
780
cgagaggtct cggagacctt ggtacaacgc aacggcgact tcctcatccg ggactcactc
840
accagcctgg gcgactatgt gctcacgtgc cgctggcgca accaggcctt gcacttcaag
900
atcaacaagg tggtggtgaa ggcaggcgag agctacacac acatccagta cctgtttgag
960
caggagagct ttgaccacgt gcccgccctc gtgcgctatc atgtgggcag ccgcaaggct
1020
gtgtcagagc agagtggtgc catcatctac tgcccggtga accgcacctt cccactgcgc
1080
tacctcgaag ccagctatgg cctgggacag gggagtagca agcctgctag ccccgtcagc
1140
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1200
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1260
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1320
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1380
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1440
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1500
ccccacacca gcccctccca cacccttggc aaggcctccc cgtcaccatc actcagcagc
1560
tacagtgacc cggactctgg ccactactgc cagctccagc ctcccgtgcg tggcagccga
1620
gagtgggcag cgactgagac ctccagccag caggccagga gctatgggga gaggctaaag
1680
gaactgtcag aaaatggggc ccctgaaggg gactggggca agaccttcac agtccccatc
1740
gtggaagtca cttcttcctt caacccggcc accttccagt cactactgat ccccagggat
1800
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3430

aaccggccac tggaggtggg ccttctgcgc aaggtcaagg agctgctggc agaagtggat
1860
gcccggacgc tggcccggca tgtcaccaag gtggactgcc tggttgctag gatactgggc
1920
gttaccaagg agatgcagac cctaatggga gtccgctggg gcatggaact gctcaccctc
1980
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2040
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2100
aagaccattc agctggcggc cgagctacgg gggactatgg caacatgtt cagcttcgcg
2160
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2220
ctgcggcagc gacacacaga gggtgccatc ctgtacgaga agaagctcaa gccttttctc
2280
aagagcctca acgagggcaa agaaggcccg ccgctgagca acaccacgtt tcctcatgtg
2340
ctgcccctca tcaccctgct ggagtgtgac tcggccccac cagagggccc tgagccctgg
2400
ggcagcacgg agcacggcgt ggaggtggtg ctggctcacc tggaggccgc ccgcacagtg
2460
gcacaccacg gaggcctgta ccacaccaat gctgaagtca agctgcaggg gttccaggcc
2520
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2580
cagggtgcca gcagcagcca ggcccggcgc tatgagaagt tcgacaaggt cctcactgcc
2640
ctgtcccaca agctggaacc tgctgtccgc tccagcgagc tgtgacccca gggacatttc
2700
ccctctgcag ctgcggacag cgtcaggggc agagggcac acaactttcc ccagagcacc
2760
ccaaggacac tgtgatcaac ccgagaatgt tctgggttca actcaagcat ctcccttgca
2820
cctccagggt cctgcgtgga ctctgggttc catcccacct gctacatgct caccaggtct
2880
ccattgagga agaacaggaa cgccggttcc cccaccagct tttgctgctc cccttcctgc
2940
tggggttccc tgttttcgag ccatgggagg caggctgctc acgcctcctc actctctgtc
3000
tgtccctcac caacaccaag gcctccatct cactgtaaat aagtctctgt tctgtaaata
3060
gatgtacaga agccatgtta tttctttcat ataataaact tttatgactc tttaaaaaaa
3120
aaaaaaa
3127

<210> 4240
<211> 860
<212> PRT
<213> Homo sapiens

<400> 4240
Met Thr Glu Gly Thr Lys Lys Thr Ser Lys Lys Phe Lys Phe Phe Lys

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    1                    5                    10                    15
Phe Lys Gly Phe Gly Ser Leu Ser Asn Leu Pro Arg Ser Phe Thr Leu
            20                    25                    30
Arg Arg Ser Ser Ala Ser Ile Ser Arg Gln Ser His Leu Glu Pro Asp
            35                    40                    45
Thr Phe Glu Ala Thr Gln Asp Asp Met Val Thr Val Pro Lys Ser Pro
            50                    55                    60
Pro Ala Tyr Ala Arg Ser Ser Asp Met Tyr Ser His Met Gly Thr Met
65                    70                    75                    80
Pro Arg Pro Ser Ile Lys Lys Ala Gln Asn Ser Gln Ala Ala Arg Gln
                85                    90                    95
Ala Gln Glu Ala Gly Pro Lys Pro Asn Leu Val Pro Gly Gly Val Pro
                100                   105                   110
Asp Pro Pro Gly Leu Glu Ala Ala Lys Glu Val Met Val Lys Ala Thr
        115                   120                   125
Gly Pro Leu Glu Asp Thr Pro Ala Met Glu Pro Asn Pro Ser Ala Val
    130                   135                   140
Glu Val Asp Pro Ile Arg Lys Pro Glu Val Pro Thr Gly Asp Val Glu
145                   150                   155                   160
Glu Glu Arg Pro Pro Arg Asp Val His Ser Glu Arg Ala Ala Gly Glu
                165                   170                   175
Pro Glu Ala Gly Ser Asp Tyr Val Lys Phe Ser Lys Glu Lys Tyr Ile
            180                   185                   190
Leu Asp Ser Ser Pro Glu Lys Leu His Lys Glu Leu Glu Glu Glu Leu
        195                   200                   205
Lys Leu Ser Ser Thr Asp Leu Arg Ser His Ala Trp Tyr His Gly Arg
    210                   215                   220
Ile Pro Arg Glu Val Ser Glu Thr Leu Val Gln Arg Asn Gly Asp Phe
225                   230                   235                   240
Leu Ile Arg Asp Ser Leu Thr Ser Leu Gly Asp Tyr Val Leu Thr Cys
                245                   250                   255
Arg Trp Arg Asn Gln Ala Leu His Phe Lys Ile Asn Lys Val Val Val
            260                   265                   270
Lys Ala Gly Glu Ser Tyr Thr His Ile Gln Tyr Leu Phe Glu Gln Glu
            275                   280                   285
Ser Phe Asp His Val Pro Ala Leu Val Arg Tyr His Val Gly Ser Arg
    290                   295                   300
Lys Ala Val Ser Glu Gln Ser Gly Ala Ile Ile Tyr Cys Pro Val Asn
305                   310                   315                   320
Arg Thr Phe Pro Leu Arg Tyr Leu Glu Ala Ser Tyr Gly Leu Gly Gln
            325                   330                   335
Gly Ser Ser Lys Pro Ala Ser Pro Val Ser Pro Ser Gly Pro Lys Gly
            340                   345                   350
Ser His Met Lys Arg Arg Ser Val Thr Met Thr Asp Gly Leu Thr Ala
        355                   360                   365
Asp Lys Val Thr Arg Ser Asp Gly Cys Pro Thr Ser Thr Ser Leu Pro
    370                   375                   380
Arg Pro Arg Asp Ser Ile Arg Ser Cys Ala Leu Ser Met Asp Gln Ile
385                   390                   395                   400
Pro Asp Leu His Ser Pro Met Ser Pro Ile Ser Glu Ser Pro Ser Ser
            405                   410                   415
Pro Ala Tyr Ser Thr Val Thr Arg Val His Ala Ala Pro Ala Ala Pro
        420                   425                   430
Ser Ala Thr Ala Leu Pro Ala Ser Pro Val Ala Arg Cys Ser Ser Glu
```

```
              435                      440                      445
Pro Gln Leu Cys Pro Gly Ser Ala Pro Lys Thr His Gly Glu Ser Asp
    450                      455                      460
Lys Gly Pro His Thr Ser Pro Ser His Thr Leu Gly Lys Ala Ser Pro
465                      470                      475                      480
Ser Pro Ser Leu Ser Ser Tyr Ser Asp Pro Asp Ser Gly His Tyr Cys
                  485                      490                      495
Gln Leu Gln Pro Pro Val Arg Gly Ser Arg Glu Trp Ala Ala Thr Glu
                  500                      505                      510
Thr Ser Ser Gln Gln Ala Arg Ser Tyr Gly Glu Arg Leu Lys Glu Leu
                  515                      520                      525
Ser Glu Asn Gly Ala Pro Glu Gly Asp Trp Gly Lys Thr Phe Thr Val
    530                      535                      540
Pro Ile Val Glu Val Thr Ser Ser Phe Asn Pro Ala Thr Phe Gln Ser
545                      550                      555                      560
Leu Leu Ile Pro Arg Asp Asn Arg Pro Leu Glu Val Gly Leu Leu Arg
                  565                      570                      575
Lys Val Lys Glu Leu Leu Ala Glu Val Asp Ala Arg Thr Leu Ala Arg
                  580                      585                      590
His Val Thr Lys Val Asp Cys Leu Val Ala Arg Ile Leu Gly Val Thr
                  595                      600                      605
Lys Glu Met Gln Thr Leu Met Gly Val Arg Trp Gly Met Glu Leu Leu
    610                      615                      620
Thr Leu Pro His Gly Arg Gln Leu Arg Leu Asp Leu Leu Glu Arg Phe
625                      630                      635                      640
His Thr Met Ser Ile Met Leu Ala Val Asp Ile Leu Gly Cys Thr Gly
                  645                      650                      655
Ser Ala Glu Glu Arg Ala Ala Leu Leu His Lys Thr Ile Gln Leu Ala
                  660                      665                      670
Ala Glu Leu Arg Gly Thr Met Gly Asn Met Phe Ser Phe Ala Ala Val
                  675                      680                      685
Met Gly Ala Leu Asp Met Ala Gln Ile Ser Arg Leu Glu Gln Thr Trp
    690                      695                      700
Val Thr Leu Arg Gln Arg His Thr Glu Gly Ala Ile Leu Tyr Glu Lys
705                      710                      715                      720
Lys Leu Lys Pro Phe Leu Lys Ser Leu Asn Glu Gly Lys Glu Gly Pro
                  725                      730                      735
Pro Leu Ser Asn Thr Thr Phe Pro His Val Leu Pro Leu Ile Thr Leu
                  740                      745                      750
Leu Glu Cys Asp Ser Ala Pro Pro Glu Gly Pro Glu Pro Trp Gly Ser
                  755                      760                      765
Thr Glu His Gly Val Glu Val Val Leu Ala His Leu Glu Ala Ala Arg
    770                      775                      780
Thr Val Ala His His Gly Gly Leu Tyr His Thr Asn Ala Glu Val Lys
785                      790                      795                      800
Leu Gln Gly Phe Gln Ala Arg Pro Glu Leu Leu Glu Val Phe Ser Thr
                  805                      810                      815
Glu Phe Gln Met Arg Leu Leu Trp Gly Ser Gln Gly Ala Ser Ser Ser
                  820                      825                      830
Gln Ala Arg Arg Tyr Glu Lys Phe Asp Lys Val Leu Thr Ala Leu Ser
                  835                      840                      845
His Lys Leu Glu Pro Ala Val Arg Ser Ser Glu Leu
    850                      855                      860
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<210> 4241
<211> 479
<212> DNA
<213> Homo sapiens

<400> 4241
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60
aacgaggaga ccaggagcca cctggagaag agtctctgct ggaaggtctc gccgcacatc
120
aagatggacc tgttgcagtg gatccaaagc aaaactcaga gcgacggctc caccctgcag
180
cagggctcct tggagttctt cagctgcttg tacgagatcc aggaggagga gtttatccag
240
caggccctga gccacttcca ggtgatcgtg gtcagcaaca ttgcctccaa gatggagcac
300
atggtctcct cgttctgtct gaagcgctgc aggagcgccc aggtgctgca cttgtatggc
360
gccacctaca gcgcggacgg ggaagaccgc gcgaggtgtc cgcaggagcg cacacgctgt
420
tggtgcagct accagagagg cccgttctgc tggacgccta cagtgaacat ctggcagcg
479

<210> 4242
<211> 159
<212> PRT
<213> Homo sapiens

<400> 4242
Xaa Ala Phe Ser Glu Arg Ser Phe Leu Ala Leu Thr Ser Arg Phe Leu
1   5   10   15
Phe Gly Leu Leu Asn Glu Glu Thr Arg Ser His Leu Glu Lys Ser Leu
            20   25   30
Cys Trp Lys Val Ser Pro His Ile Lys Met Asp Leu Leu Gln Trp Ile
            35   40   45
Gln Ser Lys Thr Gln Ser Asp Gly Ser Thr Leu Gln Gln Gly Ser Leu
        50   55   60
Glu Phe Phe Ser Cys Leu Tyr Glu Ile Gln Glu Glu Glu Phe Ile Gln
65   70   75   80
Gln Ala Leu Ser His Phe Gln Val Ile Val Val Ser Asn Ile Ala Ser
                85   90   95
Lys Met Glu His Met Val Ser Ser Phe Cys Leu Lys Arg Cys Arg Ser
                100   105   110
Ala Gln Val Leu His Leu Tyr Gly Ala Thr Tyr Ser Ala Asp Gly Glu
            115   120   125
Asp Arg Ala Arg Cys Pro Gln Glu Arg Thr Arg Cys Trp Cys Ser Tyr
        130   135   140
Gln Arg Gly Pro Phe Cys Trp Thr Pro Thr Val Asn Ile Trp Gln
145   150   155

<210> 4243
<211> 3159
<212> DNA
<213> Homo sapiens

<400> 4243

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tgccactgcc gccctgccgg ggccatgttc gctctgggct tgcccttctt ggtgctcttg
120

gtggcctcgg tcgagagcca tctgggggtt ctggggccca agaacgtctc gcagaaagac
180

gccgagtttg agcgcaccta cgtggacgag gtcaacagcg agctggtcaa catctacacc
240

ttcaaccata ctgtgacccg caacaggaca gagggcgtgc gtgtgtctgt gaacgtcctg
300

aacaagcaga agggggcgcc gttgctgttt gtggtccgcc agaaggaggc tgtggtgtcc
360

ttccaggtgc ccctaatcct gcgagggatg tttcagcgca agtacctcta ccaaaaagtg
420

gaacgaaccc tgtgtcagcc ccccaccaag aatgagtcgg agattcagtt cttctacgtg
480

gatgtgtcca ccctgtcacc agtcaacacc acataccagc tccgggtcag ccgcatggac
540

gattttgtgc tcaggactgg ggagcagttc agcttcaata ccacagcagc acagccccag
600

tacttcaagt atgagttccc tgaaggcgtg gactcggtaa ttgtcaaggt gacctccaac
660

aaggccttcc cctgctcagt catctccatt caggatgtgc tgtgtcctgt ctatgacctg
720

gacaacaacg tagccttcat cggcatgtac cagacgatga ccaagaaggc ggccatcacc
780

gtacagcgca agacttccc cagcaacagc ttttatgtgg tggtggtggt gaagaccgaa
840

gaccaagcct gcggggggctc cctgcctttc taccccttcg cagaagatga accggtcgat
900

caagggcacc gccagaaaac cctgtcagtg ctggtgtctc aagcagtcac gtctgaggca
960

tacgtcagtg ggatgctctt ttgcctgggt atatttctct cctttttacct gctgaccgtc
1020

ctcctggcct gctgggagaa ctggaggcag aagaagaaga ccctgctggt ggccattgac
1080

cgagcctgcc cagaaagcgc ttctctcctt ggtcaccctc gagtcctggc tgattctttt
1140

cctggcagtt ccccttatga gggttacaac tatggctcct ttgagaatgt ttctggatct
1200

accgatggtc tggttgacag cgctggcact ggggacctct cttacggtta ccagggcac
1260

gaccagttca gcggcgcct cccctctggc cagatgcggc agctgtgcat tgccatgggc
1320

cgctcctttg aacctgtagg tactcggccc cgagtggact ccatgagctc tgtggaggag
1380

gatgactacg acacattgac cgacatcgat tccgacaaga atgtcattcg caccaagcaa
1440

tacctctatg tggctgacct ggcacggaag gacaagcgtg ttctgcggaa aaagtaccag
1500

atctacttct ggaacattgc caccattgct gtcttctatg cccttcctgt ggtgcagctg
1560

gtgatcacct accagacggt ggtgaatgtc acagggaatc aggacatctg ctactacaac
1620
ttcctctgcg cccacccact gggcaatctc agcgccttca acaacatcct cagcaacctg
1680
gggtacatcc tgctggggct gcttttcctg ctcatcatcc tgcaacggga gatcaaccac
1740
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1800
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1920
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1980
agtgcctacg cctgcctggc cattgtcatc ttcttctctg tgctgggcgt ggtctttggc
2040
aaagggaaca cggcgttctg gatcgtcttc tccatcattc acatcatcgc caccctgctc
2100
ctcagcacgc agctctatta catgggccgg tggaaactgg actcggggat cttccgccgc
2160
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2220
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2280
atcatgcgcc ccaatgattt cgcttcctac ttgttggcca ttggcatctg caacctgctc
2340
ctttacttcg ccttctacat catcatgaag ctccggagtg gggagaggat caagctcatc
2400
cccctgctct gcatcgtttg cacctccgtg gtctggggct tcgcgctctt cttcttcttc
2460
cagggactca gcacctggca gaaaacccct gcagagtcga gggagcacaa ccgggactgc
2520
atcctcctcg acttctttga cgaccacgac atctggcact cctctctc catcgccatg
2580
ttcgggtcct tcctggtaag cgggcctccc ggcgcagcgt tgaggataac gtgaaaggta
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gcagctgcct ccttctctgt gagctgatct ggcgtccaca ccccaggtgt tagctgacac
2700
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2760
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2820
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2880
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2940
ctggtccacc ccagatgctg aggatggggg agctcaggcg gggcctctgc tttggggatg
3000
ggaatgtgtt tttctcccaa acttgttttt atagctctgc ttgaagggct gggagatgag
3060
gtgggtctgg atcttttctc agagcgtctc catgctatgg ttgcatttcc gttttctatg
3120
aatgaatttg catacaataa ccaaccagac tcagtaaaa
3159

```
<210> 4244
<211> 849
<212> PRT
<213> Homo sapiens

<400> 4244
Met Phe Ala Leu Gly Leu Pro Phe Leu Val Leu Leu Val Ala Ser Val
1               5                   10                  15
Glu Ser His Leu Gly Val Leu Gly Pro Lys Asn Val Ser Gln Lys Asp
            20                  25                  30
Ala Glu Phe Glu Arg Thr Tyr Val Asp Glu Val Asn Ser Glu Leu Val
        35                  40                  45
Asn Ile Tyr Thr Phe Asn His Thr Val Thr Arg Asn Arg Thr Glu Gly
    50                  55                  60
Val Arg Val Ser Val Asn Val Leu Asn Lys Gln Lys Gly Ala Pro Leu
65                  70                  75                  80
Leu Phe Val Val Arg Gln Lys Glu Ala Val Val Ser Phe Gln Val Pro
                85                  90                  95
Leu Ile Leu Arg Gly Met Phe Gln Arg Lys Tyr Leu Tyr Gln Lys Val
            100                 105                 110
Glu Arg Thr Leu Cys Gln Pro Pro Thr Lys Asn Glu Ser Glu Ile Gln
            115                 120                 125
Phe Phe Tyr Val Asp Val Ser Thr Leu Ser Pro Val Asn Thr Thr Tyr
    130                 135                 140
Gln Leu Arg Val Ser Arg Met Asp Asp Phe Val Leu Arg Thr Gly Glu
145                 150                 155                 160
Gln Phe Ser Phe Asn Thr Thr Ala Ala Gln Pro Gln Tyr Phe Lys Tyr
                165                 170                 175
Glu Phe Pro Glu Gly Val Asp Ser Val Ile Val Lys Val Thr Ser Asn
            180                 185                 190
Lys Ala Phe Pro Cys Ser Val Ile Ser Ile Gln Asp Val Leu Cys Pro
            195                 200                 205
Val Tyr Asp Leu Asp Asn Asn Val Ala Phe Ile Gly Met Tyr Gln Thr
    210                 215                 220
Met Thr Lys Lys Ala Ala Ile Thr Val Gln Arg Lys Asp Phe Pro Ser
225                 230                 235                 240
Asn Ser Phe Tyr Val Val Val Val Val Lys Thr Glu Asp Gln Ala Cys
                245                 250                 255
Gly Gly Ser Leu Pro Phe Tyr Pro Phe Ala Glu Asp Glu Pro Val Asp
            260                 265                 270
Gln Gly His Arg Gln Lys Thr Leu Ser Val Leu Val Ser Gln Ala Val
            275                 280                 285
Thr Ser Glu Ala Tyr Val Ser Gly Met Leu Phe Cys Leu Gly Ile Phe
    290                 295                 300
Leu Ser Phe Tyr Leu Leu Thr Val Leu Leu Ala Cys Trp Glu Asn Trp
305                 310                 315                 320
Arg Gln Lys Lys Lys Thr Leu Leu Val Ala Ile Asp Arg Ala Cys Pro
                325                 330                 335
Glu Ser Ala Ser Leu Leu Gly His Pro Arg Val Leu Ala Asp Ser Phe
            340                 345                 350
Pro Gly Ser Ser Pro Tyr Glu Gly Tyr Asn Tyr Gly Ser Phe Glu Asn
            355                 360                 365
Val Ser Gly Ser Thr Asp Gly Leu Val Asp Ser Ala Gly Thr Gly Asp
```

```
            370                    375                    380
Leu Ser Tyr Gly Tyr Gln Gly His Asp Gln Phe Lys Arg Arg Leu Pro
385                    390                    395                    400
Ser Gly Gln Met Arg Gln Leu Cys Ile Ala Met Gly Arg Ser Phe Glu
                405                    410                    415
Pro Val Gly Thr Arg Pro Arg Val Asp Ser Met Ser Ser Val Glu Glu
                420                    425                    430
Asp Asp Tyr Asp Thr Leu Thr Asp Ile Asp Ser Asp Lys Asn Val Ile
            435                    440                    445
Arg Thr Lys Gln Tyr Leu Tyr Val Ala Asp Leu Ala Arg Lys Asp Lys
            450                    455                    460
Arg Val Leu Arg Lys Lys Tyr Gln Ile Tyr Phe Trp Asn Ile Ala Thr
465                    470                    475                    480
Ile Ala Val Phe Tyr Ala Leu Pro Val Val Gln Leu Val Ile Thr Tyr
                485                    490                    495
Gln Thr Val Val Asn Val Thr Gly Asn Gln Asp Ile Cys Tyr Tyr Asn
            500                    505                    510
Phe Leu Cys Ala His Pro Leu Gly Asn Leu Ser Ala Phe Asn Asn Ile
            515                    520                    525
Leu Ser Asn Leu Gly Tyr Ile Leu Leu Gly Leu Leu Phe Leu Leu Ile
            530                    535                    540
Ile Leu Gln Arg Glu Ile Asn His Asn Arg Ala Leu Leu Arg Asn Asp
545                    550                    555                    560
Leu Cys Ala Leu Glu Cys Gly Ile Pro Lys His Phe Gly Leu Phe Tyr
                565                    570                    575
Ala Met Gly Thr Ala Leu Met Met Glu Gly Leu Leu Ser Ala Cys Tyr
            580                    585                    590
His Val Cys Pro Asn Tyr Thr Asn Phe Gln Phe Asp Thr Ser Phe Met
            595                    600                    605
Tyr Met Ile Ala Gly Leu Cys Met Leu Lys Leu Tyr Gln Lys Arg His
            610                    615                    620
Pro Asp Ile Asn Ala Ser Ala Tyr Ser Ala Tyr Ala Cys Leu Ala Ile
625                    630                    635                    640
Val Ile Phe Phe Ser Val Leu Gly Val Val Phe Gly Lys Gly Asn Thr
                645                    650                    655
Ala Phe Trp Ile Val Phe Ser Ile Ile His Ile Ile Ala Thr Leu Leu
                660                    665                    670
Leu Ser Thr Gln Leu Tyr Tyr Met Gly Arg Trp Lys Leu Asp Ser Gly
            675                    680                    685
Ile Phe Arg Arg Ile Leu His Val Leu Tyr Thr Asp Cys Ile Arg Gln
            690                    695                    700
Cys Ser Gly Pro Leu Tyr Val Asp Arg Met Val Leu Leu Val Met Gly
705                    710                    715                    720
Asn Val Ile Asn Trp Ser Leu Ala Ala Tyr Gly Leu Ile Met Arg Pro
                725                    730                    735
Asn Asp Phe Ala Ser Tyr Leu Leu Ala Ile Gly Ile Cys Asn Leu Leu
            740                    745                    750
Leu Tyr Phe Ala Phe Tyr Ile Ile Met Lys Leu Arg Ser Gly Glu Arg
            755                    760                    765
Ile Lys Leu Ile Pro Leu Leu Cys Ile Val Cys Thr Ser Val Val Trp
            770                    775                    780
Gly Phe Ala Leu Phe Phe Phe Phe Gln Gly Leu Ser Thr Trp Gln Lys
785                    790                    795                    800
Thr Pro Ala Glu Ser Arg Glu His Asn Arg Asp Cys Ile Leu Leu Asp
```

```
                 805               810               815
Phe Phe Asp Asp His Asp Ile Trp His Phe Leu Ser Ser Ile Ala Met
             820               825               830
Phe Gly Ser Phe Leu Val Ser Gly Pro Pro Gly Ala Ala Leu Arg Ile
         835               840               845
Thr
```

```
<210> 4245
<211> 909
<212> DNA
<213> Homo sapiens
```

```
<400> 4245
ngggcccaga gcctccaaga ggctgcacac caggagctca acaccctcaa gttccagctg
60
agtgctgaaa tcatggacta ccagagcaga cttaagaatg ctggtgaaga gtgcaagagc
120
ctcagggggcc agcttgagga gcaaggccgg cagctgcagg ctgctgagga agctgtggag
180
aagctgaagg ccacccaagc agacatggga gagaagctga gctgcactag caaccatctt
240
gcagagtgcc aggcggccat gctgaggaag gacaaggagg gggctgccct gcgtgaagac
300
ctagaaagga cccagaagga actcgaaaaa gccacaacaa aaatccaaga gtattacaac
360
aaactctgcc aggaggtgac aaatcgtgag aggaatgacc agaagatgct tgctgacctg
420
gatgacctca acagaaccaa gaagtatctc gaggagcggc tgatagagct gctcagggac
480
aaggatgctc tctggcagaa gtcagatgcc ctggaattcc agcagaagct cagtgctgag
540
gagagatggc tcggagacac agaggcaaac cactgcctcg actgtaagcg ggagttcagc
600
tggatggtgc ggcggcacca ctgcaggata tgtggccgca tcttctgtta ctactgctgc
660
aacaactacg tcctgagcaa gcacggtggc aaaaaggagc gctgctgccg agcctgtttc
720
cagaagctca gtgaaggccc tggctcccct gatagcagtg gctcaggcac tagccaggga
780
gagctcagcc ctgcactgtc accagcctca cctgggcccc aggccacagg aggccaagga
840
gcaaatacag actacaggcc accggacgac gctgtgtttg atatcatcac agatgaggaa
900
ttgtgccag
909
```

```
<210> 4246
<211> 303
<212> PRT
<213> Homo sapiens
```

```
<400> 4246
Xaa Ala Gln Ser Leu Gln Glu Ala Ala His Gln Glu Leu Asn Thr Leu
```

```
 1                  5                    10                   15
Lys Phe Gln Leu Ser Ala Glu Ile Met Asp Tyr Gln Ser Arg Leu Lys
             20                   25                   30
Asn Ala Gly Glu Glu Cys Lys Ser Leu Arg Gly Gln Leu Glu Glu Gln
             35                   40                   45
Gly Arg Gln Leu Gln Ala Ala Glu Glu Ala Val Glu Lys Leu Lys Ala
             50                   55                   60
Thr Gln Ala Asp Met Gly Glu Lys Leu Ser Cys Thr Ser Asn His Leu
65                   70                   75                   80
Ala Glu Cys Gln Ala Ala Met Leu Arg Lys Asp Lys Glu Gly Ala Ala
                 85                   90                   95
Leu Arg Glu Asp Leu Glu Arg Thr Gln Lys Glu Leu Glu Lys Ala Thr
            100                  105                  110
Thr Lys Ile Gln Glu Tyr Tyr Asn Lys Leu Cys Gln Glu Val Thr Asn
            115                  120                  125
Arg Glu Arg Asn Asp Gln Lys Met Leu Ala Asp Leu Asp Asp Leu Asn
            130                  135                  140
Arg Thr Lys Lys Tyr Leu Glu Glu Arg Leu Ile Glu Leu Leu Arg Asp
145                  150                  155                  160
Lys Asp Ala Leu Trp Gln Lys Ser Asp Ala Leu Glu Phe Gln Gln Lys
                165                  170                  175
Leu Ser Ala Glu Glu Arg Trp Leu Gly Asp Thr Glu Ala Asn His Cys
                180                  185                  190
Leu Asp Cys Lys Arg Glu Phe Ser Trp Met Val Arg Arg His His Cys
                195                  200                  205
Arg Ile Cys Gly Arg Ile Phe Cys Tyr Tyr Cys Cys Asn Asn Tyr Val
            210                  215                  220
Leu Ser Lys His Gly Gly Lys Lys Glu Arg Cys Cys Arg Ala Cys Phe
225                  230                  235                  240
Gln Lys Leu Ser Glu Gly Pro Gly Ser Pro Asp Ser Ser Gly Ser Gly
                245                  250                  255
Thr Ser Gln Gly Glu Leu Ser Pro Ala Leu Ser Pro Ala Ser Pro Gly
            260                  265                  270
Pro Gln Ala Thr Gly Gly Gln Gly Ala Asn Thr Asp Tyr Arg Pro Pro
            275                  280                  285
Asp Asp Ala Val Phe Asp Ile Ile Thr Asp Glu Glu Leu Cys Gln
            290                  295                  300
```

<210> 4247
<211> 5755
<212> DNA
<213> Homo sapiens

<400> 4247
caccctctgg acaagagaac gggcgagcgg gagctaggag ggaagagtgg agaggaccgg
60
cgaggcgcgc cagccggagc cacctccttc ccggccgccc cctccccact ccccctacac
120
acacacgctc gctcgctcgc cggcgcgcgc acaccccccg cgccggaccc gcacctcggc
180
gggcgccaca cactcggcag cccgagccgc ggtagccgca gcgggatgga ggcggcgcgc
240
acggagcgcc ccgcaggcag gccggggggcg ccgcttgtcc ggacggggct cctactcttg
300

3440

```
tcgacgtggg tcctggccgg cgccgagatc acttgggacg cgacaggcgg tcccggacgc
360
ccggcggccc cggcttcgcg gccaccggcg ttgtctccac tctcgccgcg ggcagtggcc
420
agccagtggc cggaggagct ggcgtcggcg cggagagccg ccgtgctggg gcgccgggcc
480
ggaccagagc tgctgcccca gcagggcggc ggcagaggcg gtgagatgca ggtggaagcc
540
ggagggacat caccggcagg cgagcggcgg ggccggggca tcccagctcc tgccaagctt
600
ggcggcgcga ggaggagtcg ccgggcgcag cccccaatca cccaggaacg cggggacgcc
660
tgggccactg ctccggccga tggttccaga ggaagccgtc cccttgctaa gggttcccgg
720
gaggaggtga aggcgccgcg ggctggggg tcggcggctg aagacctccg gctgcccagc
780
acctccttcg cgctgaccgg ggactcggcc cacaaccaag ccatggtgca ctggtcggga
840
cacaacagca gcgtcatact tatcctgacg aagctgtatg acttcaacct gggcagcgtg
900
actgagagtt cactatggag gtcgacagat tatggcacca cctatgaaaa gctgaatgac
960
aaagtgggtt tgaagactgt cctcagttac ctctatgtca atccaaccaa caaaaggaag
1020
attatgcttc tcagtgatcc tgagatggag agcagcatat tgatcagctc agacgaaggg
1080
gcgacctatc agaagtatcg gctcaccttc tatatccaga gcctgctctt tcatcccaag
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1200
ggaagacggt ggcaactcat gcatgaacgc atcacaccca caggtttta ttggtcggtg
1260
gccggattgg ataaggaggc ggacctggtg cacatggagg tgcggaccac ggatggatat
1320
gctcactacc tcacctgcag gatccaggaa tgtgccgaga caactagaag tgggccttt
1380
gcccgctcca ttgacatcag ttccctggtt gtccaggatg aatatatctt cattcaggta
1440
acaactagtg gaagagccag ctactacgtg tcttatcgaa gagaggcctt tgctcagata
1500
aagctgccta agtactcgtt gccaaaggac atgcacatca tcagtacaga cgagaaccaa
1560
gtatttgctg cggtccaaga atggaaccag aatgacacgt acaacctcta catctcagac
1620
acgcgtggga tttacttcac tctggccatg gagaacatca gagcagcag aggtctaatg
1680
gggaacatca ttattgaatt gtatgaggta gcaggtatca aagggatatt tctggcaaac
1740
aagaaggtgg acgaccaggt gaagacatac atcacttaca acaaaggcag ggattggcgc
1800
ctgctgcaag ctccggatgt ggacctgaga ggaagcccag tgcactgcct gctgcccttc
1860
tgttccttac atctgcacct gcaactctct gaaaatccat attcctcagg aagaatctct
1920
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```
agcaaggaga cagccccagg acttgtggtg gctacaggca acattggccc ggagctctca
1980
tatactgata ttggtgtgtt catctcctcc gatgggggca acacatggag acagatcttt
2040
gatgaagagt acaatgtctg gttcctagac tggggtggtg ccctcgtggc catgaaacac
2100
acacctctgc cagtcaggca tttgtgggtg agttttgatg agggccactc ttgggacaag
2160
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2220
acccacatca tgacagtttt tggccacttc agcctccgct ccgaatggca attggtgaaa
2280
gtggactaca aatctatctt cagccggcat tgcaccaagg aggactatca gacctggcac
2340
ctgctcaatc agggagagcc ttgtgtcatg ggagaaagga aaatattcaa gaaacgtaag
2400
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2520
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2580
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2640
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2700
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2760
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2820
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2880
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2940
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3000
ataagaaata aggaggtcaa catcagtgca gtcgtgtggc ccagtcaact ggggaccctt
3060
acctatttct ggtggttcgg caatagcaca aagcctctca tcactttgga cagcagcatt
3120
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3180
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3240
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3300
ggcaatgtca tcaagcgagc tctggttaaa gtaaccagtg tcccagagga ccagatcctc
3360
attgccgtgt ttcctggtct ccccacttca gcagagcttt tcattcttcc acccaagaac
3420
ctgacagaga ggaggaaagg caatgaaggg gacctggaac aaattgtaga aacactgttt
3480
aatgctctca accaaaattt ggtccagttt gagctgaagc cggggggtaca agtcattgtg
3540
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tatgtcacac agctgacgtt agctccattg gtggactcca gtgctgggca cagcagctca
3600
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3780
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3900
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3960
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4020
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4380
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4440
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4500
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4680
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4980
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5040
agaggttgga agggaagagg catttgtgga attatgagtt catgcaaaac tctccaggcc
5100
aagtaggggt ctagccttta atgatattag tcaaaggcaa ttttagcaaa gctgtgctat
5160
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ttgcttgtca gatgtacaca acttccttaa agtcaaatgt ctgccttcag ttcccttaag
5220

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5280

ccccttcaca catttacaca taccaatttt tttcaatagg gtcacgttaa gccatgctgt
5340

aagcattgtt tttattttca ggcttagcct gagcacactt atttttgaaa atgatataat
5400

gtatatatat gggaggaaag gccacatttt gtacctgtta atttttgtgg gatgttgttc
5460

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5520

agatcagtat taggaatatt tctaaagatc ctgctttttt gtttcaaggg ttaaatgggg
5580

cagacaattg caatacttgt actaaacact ggaatacaaa tgcatgactc atatctatat
5640

atacagtata tgtacatata ctgttcttgg ttttattgtt ccacttgaat atttctactg
5700

taaaaaaaag acagtggttt tgaaattgtt gaaataaat gtatttttgt acatc
5755

<210> 4248
<211> 1297
<212> PRT
<213> Homo sapiens

<400> 4248
His Pro Leu Asp Lys Arg Thr Gly Glu Arg Glu Leu Gly Gly Lys Ser
 1   5   10   15
Gly Glu Asp Arg Arg Gly Ala Pro Ala Gly Ala Thr Ser Phe Pro Ala
             20   25   30
Ala Pro Ser Pro Leu Pro Leu His Thr His Ala Arg Ser Leu Ala Gly
         35   40   45
Ala Arg Thr Pro Pro Ala Pro Asp Pro His Leu Gly Gly Arg His Thr
     50   55   60
Leu Gly Ser Pro Ser Arg Gly Ser Arg Ser Gly Met Glu Ala Ala Arg
 65   70   75   80
Thr Glu Arg Pro Ala Gly Arg Pro Gly Ala Pro Leu Val Arg Thr Gly
                 85   90   95
Leu Leu Leu Leu Ser Thr Trp Val Leu Ala Gly Ala Glu Ile Thr Trp
             100   105   110
Asp Ala Thr Gly Gly Pro Gly Arg Pro Ala Ala Pro Ala Ser Arg Pro
         115   120   125
Pro Ala Leu Ser Pro Leu Ser Pro Arg Ala Val Ala Ser Gln Trp Pro
     130   135   140
Glu Glu Leu Ala Ser Ala Arg Arg Ala Ala Val Leu Gly Arg Arg Ala
145   150   155   160
Gly Pro Glu Leu Leu Pro Gln Gln Gly Gly Gly Arg Gly Gly Glu Met
                 165   170   175
Gln Val Glu Ala Gly Gly Thr Ser Pro Ala Gly Glu Arg Arg Gly Arg
             180   185   190
Gly Ile Pro Ala Pro Ala Lys Leu Gly Gly Ala Arg Arg Ser Arg Arg
         195   200   205
Ala Gln Pro Pro Ile Thr Gln Glu Arg Gly Asp Ala Trp Ala Thr Ala

3444

```
            210                    215                    220
Pro Ala Asp Gly Ser Arg Gly Ser Arg Pro Leu Ala Lys Gly Ser Arg
225                    230                    235                    240
Glu Glu Val Lys Ala Pro Arg Ala Gly Gly Ser Ala Ala Glu Asp Leu
                245                    250                    255
Arg Leu Pro Ser Thr Ser Phe Ala Leu Thr Gly Asp Ser Ala His Asn
                260                    265                    270
Gln Ala Met Val His Trp Ser Gly His Asn Ser Ser Val Ile Leu Ile
                275                    280                    285
Leu Thr Lys Leu Tyr Asp Phe Asn Leu Gly Ser Val Thr Glu Ser Ser
        290                    295                    300
Leu Trp Arg Ser Thr Asp Tyr Gly Thr Thr Tyr Glu Lys Leu Asn Asp
305                    310                    315                    320
Lys Val Gly Leu Lys Thr Val Leu Ser Tyr Leu Tyr Val Asn Pro Thr
                325                    330                    335
Asn Lys Arg Lys Ile Met Leu Leu Ser Asp Pro Glu Met Glu Ser Ser
                340                    345                    350
Ile Leu Ile Ser Ser Asp Glu Gly Ala Thr Tyr Gln Lys Tyr Arg Leu
            355                    360                    365
Thr Phe Tyr Ile Gln Ser Leu Leu Phe His Pro Lys Gln Glu Asp Trp
        370                    375                    380
Val Leu Ala Tyr Ser Leu Asp Gln Lys Leu Tyr Ser Ser Met Asp Phe
385                    390                    395                    400
Gly Arg Arg Trp Gln Leu Met His Glu Arg Ile Thr Pro Asn Arg Phe
                405                    410                    415
Tyr Trp Ser Val Ala Gly Leu Asp Lys Glu Ala Asp Leu Val His Met
            420                    425                    430
Glu Val Arg Thr Thr Asp Gly Tyr Ala His Tyr Leu Thr Cys Arg Ile
            435                    440                    445
Gln Glu Cys Ala Glu Thr Thr Arg Ser Gly Pro Phe Ala Arg Ser Ile
        450                    455                    460
Asp Ile Ser Ser Leu Val Val Gln Asp Glu Tyr Ile Phe Ile Gln Val
465                    470                    475                    480
Thr Thr Ser Gly Arg Ala Ser Tyr Tyr Val Ser Tyr Arg Arg Glu Ala
                485                    490                    495
Phe Ala Gln Ile Lys Leu Pro Lys Tyr Ser Leu Pro Lys Asp Met His
                500                    505                    510
Ile Ile Ser Thr Asp Glu Asn Gln Val Phe Ala Ala Val Gln Glu Trp
                515                    520                    525
Asn Gln Asn Asp Thr Tyr Asn Leu Tyr Ile Ser Asp Thr Arg Gly Ile
        530                    535                    540
Tyr Phe Thr Leu Ala Met Glu Asn Ile Lys Ser Ser Arg Gly Leu Met
545                    550                    555                    560
Gly Asn Ile Ile Ile Glu Leu Tyr Glu Val Ala Gly Ile Lys Gly Ile
                565                    570                    575
Phe Leu Ala Asn Lys Lys Val Asp Asp Gln Val Lys Thr Tyr Ile Thr
                580                    585                    590
Tyr Asn Lys Gly Arg Asp Trp Arg Leu Leu Gln Ala Pro Asp Val Asp
            595                    600                    605
Leu Arg Gly Ser Pro Val His Cys Leu Leu Pro Phe Cys Ser Leu His
        610                    615                    620
Leu His Leu Gln Leu Ser Glu Asn Pro Tyr Ser Ser Gly Arg Ile Ser
625                    630                    635                    640
Ser Lys Glu Thr Ala Pro Gly Leu Val Val Ala Thr Gly Asn Ile Gly
```

```
                        645                 650                 655
Pro Glu Leu Ser Tyr Thr Asp Ile Gly Val Phe Ile Ser Ser Asp Gly
                660                 665                 670
Gly Asn Thr Trp Arg Gln Ile Phe Asp Glu Glu Tyr Asn Val Trp Phe
                675                 680                 685
Leu Asp Trp Gly Gly Ala Leu Val Ala Met Lys His Thr Pro Leu Pro
            690                 695                 700
Val Arg His Leu Trp Val Ser Phe Asp Glu Gly His Ser Trp Asp Lys
705                 710                 715                 720
Tyr Gly Phe Thr Ser Val Pro Leu Phe Val Asp Gly Ala Leu Val Glu
                725                 730                 735
Ala Gly Met Glu Thr His Ile Met Thr Val Phe Gly His Phe Ser Leu
                740                 745                 750
Arg Ser Glu Trp Gln Leu Val Lys Val Asp Tyr Lys Ser Ile Phe Ser
                755                 760                 765
Arg His Cys Thr Lys Glu Asp Tyr Gln Thr Trp His Leu Leu Asn Gln
            770                 775                 780
Gly Glu Pro Cys Val Met Gly Glu Arg Lys Ile Phe Lys Lys Arg Lys
785                 790                 795                 800
Pro Gly Ala Gln Cys Ala Leu Gly Arg Asp His Ser Gly Ser Val Val
                805                 810                 815
Ser Glu Pro Cys Val Cys Ala Asn Trp Asp Phe Glu Cys Asp Tyr Gly
                820                 825                 830
Tyr Glu Arg His Gly Glu Ser Gln Cys Val Pro Ala Phe Trp Tyr Asn
            835                 840                 845
Pro Ala Ser Pro Ser Lys Asp Cys Ser Leu Gly Gln Ser Tyr Leu Asn
            850                 855                 860
Ser Thr Gly Tyr Arg Arg Ile Val Ser Asn Asn Cys Thr Asp Gly Leu
865                 870                 875                 880
Arg Glu Lys Tyr Thr Ala Lys Ala Gln Met Cys Pro Gly Lys Ala Pro
                885                 890                 895
Arg Gly Leu His Val Val Thr Thr Asp Gly Arg Leu Val Ala Glu Gln
            900                 905                 910
Gly His Asn Ala Thr Phe Ile Ile Leu Met Glu Glu Gly Asp Leu Gln
            915                 920                 925
Arg Thr Asn Ile Gln Leu Asp Phe Gly Asp Gly Ile Ala Val Ser Tyr
            930                 935                 940
Ala Asn Phe Ser Pro Ile Glu Asp Gly Ile Lys His Val Tyr Lys Ser
945                 950                 955                 960
Ala Gly Ile Phe Gln Val Thr Ala Tyr Ala Glu Asn Asn Leu Gly Ser
                965                 970                 975
Asp Thr Ala Val Leu Phe Leu His Val Val Cys Pro Val Glu His Val
            980                 985                 990
His Leu Arg Val Pro Phe Val Ala Ile Arg Asn Lys Glu Val Asn Ile
            995                 1000                1005
Ser Ala Val Val Trp Pro Ser Gln Leu Gly Thr Leu Thr Tyr Phe Trp
    1010                1015                1020
Trp Phe Gly Asn Ser Thr Lys Pro Leu Ile Thr Leu Asp Ser Ser Ile
1025                1030                1035                1040
Ser Phe Thr Phe Leu Ala Glu Gly Thr Asp Thr Ile Thr Val Gln Val
                1045                1050                1055
Ala Ala Gly Asn Ala Leu Ile Gln Asp Thr Lys Glu Ile Ala Val His
            1060                1065                1070
Glu Tyr Phe Gln Ser Gln Leu Leu Ser Phe Ser Pro Asn Leu Asp Tyr
```

```
         1075             1080             1085
His Asn Pro Asp Ile Pro Glu Trp Arg Lys Asp Ile Gly Asn Val Ile
     1090             1095            ˙1100
Lys Arg Ala Leu Val Lys Val Thr Ser Val Pro Glu Asp Gln Ile Leu
1105             1110             1115             1120
Ile Ala Val Phe Pro Gly Leu Pro Thr Ser Ala Glu Leu Phe Ile Leu
             1125             1130             1135
Pro Pro Lys Asn Leu Thr Glu Arg Arg Lys Gly Asn Glu Gly Asp Leu
         1140             1145             1150
Glu Gln Ile Val Glu Thr Leu Phe Asn Ala Leu Asn Gln Asn Leu Val
         1155             1160             1165
Gln Phe Glu Leu Lys Pro Gly Val Gln Val Ile Val Tyr Val Thr Gln
     1170             1175             1180
Leu Thr Leu Ala Pro Leu Val Asp Ser Ser Ala Gly His Ser Ser Ser
1185             1190             1195             1200
Ala Met Leu Met Leu Leu Ser Val Val Phe Val Gly Leu Ala Val Phe
             1205             1210             1215
Leu Ile Tyr Lys Phe Lys Arg Lys Ile Pro Trp Ile Asn Ile Tyr Ala
         1220             1225             1230
Gln Val Gln His Asp Lys Glu Gln Glu Met Ile Gly Ser Val Ser Gln
         1235             1240             1245
Ser Glu Asn Ala Pro Lys Ile Thr Leu Ser Asp Phe Thr Glu Pro Glu
         1250             1255             1260
Glu Leu Leu Asp Lys Glu Leu Asp Thr Arg Val Ile Gly Gly Ile Ala
1265             1270             1275             1280
Thr Ile Ala Asn Ser Glu Ser Thr Lys Glu Ile Pro Asn Cys Thr Ser
             1285             1290             1295
Val
```

```
<210> 4249
<211> 553
<212> DNA
<213> Homo sapiens

<400> 4249
nnccgggccc tccccaaaaa ggaccaggtt gtccagaaaa gtgagcagct aaaactgttt
60
ctaagaaact caactgcatc cagaacaaag attaagatga tttataaaaa tgctaaaaca
120
cccagcacgc aacatggtaa aattcgcaat gcctcaggca tcaacccgag agtaccaggc
180
ccacaggaag gcagcataat aggaccccaa acaaggagga aaagcagcct cctgaaaccg
240
accctgatat cagaaccagc agacatgggc actcagcagt tcttacaact gaatcccaat
300
ctgcaaaagt ttagtagaga catggaagac gtaaagggga ccccaagcaa gcctctagag
360
aattataaca tgttggctgg gcttggtggc tcacgcgtgt catcgcagca ctttgggagg
420
ctgaggcagg aggatcgctt gagcccagga gttcaagacc agcctggacc acatagtgag
480
accccatct cataaaaaat aaaaaaaat tgaattacaa cacgaggtga caaaagcact
540
```

```
ggatgagatt aac
553


<210> 4250
<211> 164
<212> PRT
<213> Homo sapiens


<400> 4250
Xaa Arg Ala Leu Pro Lys Lys Asp Gln Val Val Gln Lys Ser Glu Gln
  1               5                  10                  15
Leu Lys Leu Phe Leu Arg Asn Ser Thr Ala Ser Arg Thr Lys Ile Lys
               20                  25                  30
Met Ile Tyr Lys Asn Ala Lys Thr Pro Ser Thr Gln His Gly Lys Ile
           35                  40                  45
Arg Asn Ala Ser Gly Ile Asn Pro Arg Val Pro Gly Pro Gln Glu Gly
       50                  55                  60
Ser Ile Ile Gly Pro Gln Thr Arg Arg Lys Ser Ser Leu Leu Lys Pro
65                  70                  75                  80
Thr Leu Ile Ser Glu Pro Ala Asp Met Gly Thr Gln Gln Phe Leu Gln
                   85                  90                  95
Leu Asn Pro Asn Leu Gln Lys Phe Ser Arg Asp Met Glu Asp Val Lys
              100                 105                 110
Gly Thr Pro Ser Lys Pro Leu Glu Asn Tyr Asn Met Leu Ala Gly Leu
          115                 120                 125
Gly Gly Ser Arg Val Ser Ser Gln His Phe Gly Arg Leu Arg Gln Glu
          130                 135                 140
Asp Arg Leu Ser Pro Gly Val Gln Asp Gln Pro Gly Pro His Ser Glu
145                 150                 155                 160
Thr Pro Ile Ser


<210> 4251
<211> 1574
<212> DNA
<213> Homo sapiens


<400> 4251
nngggggggg gggggggggg ggttaagctc cttcagtagg gtactagggc accaaaaaaa
60
aaaagggcgg cgcggggggg gtcccccaca caaaaaaagg ggggaaagg aattcgcccc
120
ggggggggggc caggccctaa ccccatttat ttcattccac agatgagggc aaccttaaga
180
gggaaggggg agatggcagg gccagcgggc gcaggaagtg ccttcccacc cccaggacct
240
gacacatctc gtctcccctc ttttccgcac tgtgggcaca aagacacttt ttcttccgca
300
ggggcgggag cccctagttc caacactgag gacgcgtgac atggtgggca ccggaaagga
360
ggggacttct cctgcacccc aagaagtggt ggggagattg ctgcccctat agccatatct
420
cggccccttc ccactcacca cccccacccc aggtgctggg ggtcccttat ttttatgcaa
480
```

taactgagct tgatgggggt gggcagggggg ccagttgagc caatcaccag cctccatatc
540
acagatcctg accctgaatc tcaggagctg cagatcgggg gcacctgccc tgacatcacc
600
aaacgctacc tgcgcctgac ctgtgccccc gacccgtcca ccgtgcgccc tgtggcagtt
660
ttgaaaaagt cgctgtgcat ggtcaagtgc cactggaaag agaagcagga ctacgcgttt
720
gcctgcgagc agatgaagtc gatccggcag gatctgacgg tgcagggcat ccgcaccgag
780
ttcacggtgg aggtgtacga gacccatgcc cggatcgcct tggagaaggg tgaccatgaa
840
gagtttaacc agtgccagac gcagctcaag tcgctgtacg ccgagaactt gcctggcaat
900
gtgggcgagt ttactgccta ccgaatcctc tactacatct tcaccaagaa ctcgggagac
960
atcaccacgg agctggcata cctcacacga gaactgaagg cagatccttg cgtggcccac
1020
gccttggcat taaggacagc ctgggccctg ggcaactacc accgcttttt ccggctctac
1080
tgccatgcac cctgcatgtc tggctacctc gtggacaagt tgcagatcg ggagcgcaag
1140
gtcgccctca aggccatgat caaaacgtat gtggtgccaa gctcccttct gcctttgctc
1200
ttcccatcct tccgcctcgc accgcccctc agaccagctc ctggccgcag gcctccccca
1260
gcccccaacc cttgtcctgg tccttgcttc cccatcatct ttctccattc agccctcccc
1320
tctccagttc ctcttgctct ccttgttggt cacctctgtg ttccgggtca ctcctctccc
1380
tctccccact gttcccagct cactgcctct ggggcctctt ctccacccca tctgtgtgtc
1440
tcttcctcct gttctctcct gcctggaccc cctagttcac tccttgccct gggcttcctc
1500
agaaccctga ggtctctgct ttctcagctt gtcgctgtgc tcccaccata gagaccatct
1560
agacagcctc tggt
1574

<210> 4252
<211> 352
<212> PRT
<213> Homo sapiens

<400> 4252
Met Gly Val Gly Arg Gly Pro Val Glu Pro Ile Thr Ser Leu His Ile
1   5   10   15
Thr Asp Pro Asp Pro Glu Ser Gln Glu Leu Gln Ile Gly Gly Thr Cys
            20   25   30
Pro Asp Ile Thr Lys Arg Tyr Leu Arg Leu Thr Cys Ala Pro Asp Pro
            35   40   45
Ser Thr Val Arg Pro Val Ala Val Leu Lys Lys Ser Leu Cys Met Val
        50   55   60
Lys Cys His Trp Lys Glu Lys Gln Asp Tyr Ala Phe Ala Cys Glu Gln

```
65                    70                   75                    80
Met Lys Ser Ile Arg Gln Asp Leu Thr Val Gln Gly Ile Arg Thr Glu
                85                   90                   95
Phe Thr Val Glu Val Tyr Glu Thr His Ala Arg Ile Ala Leu Glu Lys
            100                  105                  110
Gly Asp His Glu Glu Phe Asn Gln Cys Gln Thr Gln Leu Lys Ser Leu
            115                  120                  125
Tyr Ala Glu Asn Leu Pro Gly Asn Val Gly Glu Phe Thr Ala Tyr Arg
        130                  135                  140
Ile Leu Tyr Tyr Ile Phe Thr Lys Asn Ser Gly Asp Ile Thr Thr Glu
145                  150                  155                  160
Leu Ala Tyr Leu Thr Arg Glu Leu Lys Ala Asp Pro Cys Val Ala His
            165                  170                  175
Ala Leu Ala Leu Arg Thr Ala Trp Ala Leu Gly Asn Tyr His Arg Phe
        180                  185                  190
Phe Arg Leu Tyr Cys His Ala Pro Cys Met Ser Gly Tyr Leu Val Asp
        195                  200                  205
Lys Phe Ala Asp Arg Glu Arg Lys Val Ala Leu Lys Ala Met Ile Lys
    210                  215                  220
Thr Tyr Val Val Pro Ser Ser Leu Leu Pro Leu Leu Phe Pro Ser Phe
225                  230                  235                  240
Arg Leu Ala Pro Pro Leu Arg Pro Ala Pro Gly Arg Arg Pro Pro Pro
            245                  250                  255
Ala Pro Asn Pro Cys Pro Gly Pro Cys Phe Pro Ile Ile Phe Leu His
            260                  265                  270
Ser Ala Leu Pro Ser Pro Val Pro Leu Ala Leu Leu Val Gly His Leu
        275                  280                  285
Cys Val Pro Gly His Ser Ser Pro Ser Pro His Cys Ser Gln Leu Thr
    290                  295                  300
Ala Ser Gly Ala Ser Ser Pro Pro His Leu Cys Val Ser Ser Ser Cys
305                  310                  315                  320
Ser Leu Leu Pro Gly Pro Pro Ser Ser Leu Leu Ala Leu Gly Phe Leu
            325                  330                  335
Arg Thr Leu Arg Ser Leu Leu Ser Gln Leu Val Ala Val Leu Pro Pro
        340                  345                  350
```

<210> 4253
<211> 1287
<212> DNA
<213> Homo sapiens

<400> 4253
nntacggctg cgagaagaca cagactgtgc aacccccaaa gcaggtctcc tcactcaccg
60
ggatagatag aactatcggc cccaattcct cagccctacc tgcaaccacc gcttgccatg
120
gtttccttgt gggtggaggg tactttcccg ccccctggtt cgggcttgc ccacgtggct
180
tgctctggcc atggaatgaa gcagaaacga aagcctgcca gttctgagcc tatgccggaa
240
gacgccttgg gcggttccgc ggtccctgtg cgcttccacc ttcacccaga aggacttctc
300
tggtgcagcc gctgcttctt cagccacggc ccaaaaggat cggagccccc tggccgatcc
360
```
```

gcaggtctgc agggagccac agagcgcagc ggccggccca gcgttcaagc ccaagcacag
420
gcctgcgaga accttgttcc agccaccgtt tgggatggtt gattaggact tgttgcagtg
480
gcggtagctc accaatccag tgcgtgcacc cgctccttta ttaggctata gagccagtgg
540
ctcccacagg gacctgatac aacagtgcgt taaataagga gcatattgag ctctcatgtc
600
gtaagccagt ggagaagtcc agggctagtg tggggggctcc ggcggggggct gtggcccccca
660
tccgcatgga gcctccccat ggttcacagg tctcagtctt cggagccttc ggccctgcga
720
gcccgaacgg tccacagggc ggcgccagac cctctttcga acgccatcct ctaaagcggc
780
tggaacaagg ttcttgcagg cctgtgcttg ggcttgaacg ctgggccggg ccgctgcgct
840
ctgtggctcc ctgtaggcct gcggatcggc cagggggctc cgttcctttt gggcggaggc
900
tgaagaagca gcggctgcac cagagaaggc cctctgggtg aaggtgggag cgcacggggc
960
ccgcggaacc acctaaggcg acttcagacg tgggctcgga actggcagcc tttcgtttct
1020
gcttcattcc aaggccagag caagccacgt gggcaaaccc aaagccaggg gacaggaaag
1080
tatcctccac ccacaacgaa accatggcaa gcggtggatg caggtacggc aatagtcta
1140
tctatcccgg tgagtgagga gacctgcttt gagggttgca caacctggat ctgctttttac
1200
agtggtgtct gtcactatga agaccccaca gggcggcgcc agaccttctt tcgaacgcca
1260
tcctctaaag cctcggctcc aaccggt
1287

<210> 4254
<211> 114
<212> PRT
<213> Homo sapiens

<400> 4254
Met Val Ser Leu Trp Val Glu Gly Thr Phe Pro Pro Pro Gly Phe Gly
1   5   10   15
Leu Ala His Val Ala Cys Ser Gly His Gly Met Lys Gln Lys Arg Lys
            20   25   30
Pro Ala Ser Ser Glu Pro Met Pro Glu Asp Ala Leu Gly Gly Ser Ala
        35   40   45
Val Pro Val Arg Phe His Leu His Pro Glu Gly Leu Leu Trp Cys Ser
    50   55   60
Arg Cys Phe Phe Ser His Gly Pro Lys Gly Ser Glu Pro Pro Gly Arg
65   70   75   80
Ser Ala Gly Leu Gln Gly Ala Thr Glu Arg Ser Gly Arg Pro Ser Val
                85   90   95
Gln Ala Gln Ala Gln Ala Cys Glu Asn Leu Val Pro Ala Thr Val Trp
            100   105   110
Asp Gly

3451

<210> 4255
<211> 2205
<212> DNA
<213> Homo sapiens

<400> 4255
cccgggcctc aaattctctg tcagaaatga agtaatggct accagccacg tcacagatga
60
atggatgaca caaatggaaa tgagtagcct gaacacttac attgtccgcc gttgcatagc
120
aacacccaat ggcgtcctca gaatttattc tgggtccctc atgggacaag cattggatcc
180
cactaggaaa caatggtatc tccatgcagt agctaatcca gggttgattt ctttgactgg
240
tccttactta gatgttggag gagctggtta tgttgtgaca atcagtcaca caattcattc
300
atccagtaca cagctgtctt ctgggcacac tgtggctgtg atgggcattg acttcacact
360
cagatacttc tacaaagttc tgatggacct attacctgtc tgtaaccaag atggtggcaa
420
caaaataagg tgcttcataa tggaggacag gggttatctg gtggcgcacc cgactctcat
480
cgaccccaaa ggacatgcac ctgtggagca gcagcacatc acccacaagg agccctggt
540
agcaaatgat atcctcaacc accccaactt tgtaaagaaa aacctgtgca acagcttcag
600
tgacagaacg gtccagaggt tttataaatt caacaccagc cttgcggggg atttgacgaa
660
ccttgtgcat ggcagccact gttccaaata cagattagca aggatcccag gaaccaacgc
720
gtttgttggc attgtcaacg aaacctgcga ctctcttgcc ttctgtgcct gcagcatggt
780
ggaccgactc tgtctcaact gtcaccgaat ggaacaaaat gaatgtgaat gtccttgtga
840
gtgccctcta gaggtcaatg agtgcactgg caacctcacc aatgcagaga ccgaaacccc
900
cagctgcgag gtccaccagg agccggtgac atacacagct attgaccctg cctgcaaga
960
tgctcttcac cagtgtgtca acagcaggtg cagtcagagg ctggaaagtg gggactgttt
1020
tggggtgctg gattgtgaat ggtgcatggt ggacagtgat ggaaagactc acctggacaa
1080
accctactgt gcccccagaa agaatgctt cggggggatt gtgggagcca aaagtcccta
1140
cgttgatgac atgggagcaa taggtgatga ggtgatcaca ttaaaatgat taaaagcgcc
1200
cctgtgggtc ttgtggctgg agggatcatg ggatgcatca atggttttgg tcctggcggt
1260
gtatgcctac cgccaccaga ttcatcgccg gagccatcag catatgtctc ctcttgctgc
1320
ccaagaaatg tcagtgcgta tgtccaacct ggagaatgac agagatgaaa gggacgacga
1380

3452

cagccacgaa gacagaggca tcatcagcaa cactcggttt atagctgcgg tcatcgaacg
1440
acatgcacac agtccagaaa gaaggcgccg ctactggggt cgatcaggaa cagaaagtga
1500
tcatggttac agcaccatga gcccacagga ggacagtgaa aatcctccat gcaacaatga
1560
ccccttgtca gccggggtcg atgtgggaaa ccatgatgag gacttagacc tggataccccc
1620
ccctcagact gctgccctac taagtcacaa gttccaccac taccggtcac accaccctac
1680
acttcatcat agccaccact tacaggcggc cgtcacggta cacactgtcg atgcagaatg
1740
ctaacaatct cctcacctcc acgccaagat gagatctggg agctacagaa tgttctggaa
1800
agaaaaagaa ccggcttaaa acccacagca agagacctcc cttgtgtttg tgctttgtgc
1860
agagttgttt gagtcatttc ctgcctgtcg acatggttaa aaacgagaga aacaacaaca
1920
cagtcacatt tgtgaagatg tgaggctggt tctgaaatgg aggggaaata agcctgatga
1980
acagacctgc cataacacta atggaaggta acagaaggcg aacctccaaa cacagagacg
2040
gaacctgcaa gtgaagctga gccagaggaa tgttccaaag agccagaagc attcagctct
2100
ccttaactgg aagagagaaa aatctgctca cccagagact ggaatgtggc acatgcagat
2160
acaaatgtgt gcattgaaga tttcgctttg tttcttagcg gtacc
2205

<210> 4256
<211> 384
<212> PRT
<213> Homo sapiens

<400> 4256
Met Ala Thr Ser His Val Thr Asp Glu Trp Met Thr Gln Met Glu Met
 1   5   10   15
Ser Ser Leu Asn Thr Tyr Ile Val Arg Arg Cys Ile Ala Thr Pro Asn
                20   25   30
Gly Val Leu Arg Ile Tyr Ser Gly Ser Leu Met Gly Gln Ala Leu Asp
            35   40   45
Pro Thr Arg Lys Gln Trp Tyr Leu His Ala Val Ala Asn Pro Gly Leu
        50   55   60
Ile Ser Leu Thr Gly Pro Tyr Leu Asp Val Gly Gly Ala Gly Tyr Val
65   70   75   80
Val Thr Ile Ser His Thr Ile His Ser Ser Thr Gln Leu Ser Ser
                85   90   95
Gly His Thr Val Ala Val Met Gly Ile Asp Phe Thr Leu Arg Tyr Phe
            100   105   110
Tyr Lys Val Leu Met Asp Leu Leu Pro Val Cys Asn Gln Asp Gly Gly
            115   120   125
Asn Lys Ile Arg Cys Phe Ile Met Glu Asp Arg Gly Tyr Leu Val Ala
        130   135   140
His Pro Thr Leu Ile Asp Pro Lys Gly His Ala Pro Val Glu Gln Gln

3453

```
145                    150                    155                    160
His Ile Thr His Lys Glu Pro Leu Val Ala Asn Asp Ile Leu Asn His
                165                    170                    175
Pro Asn Phe Val Lys Lys Asn Leu Cys Asn Ser Phe Ser Asp Arg Thr
                180                    185                    190
Val Gln Arg Phe Tyr Lys Phe Asn Thr Ser Leu Ala Gly Asp Leu Thr
                195                    200                    205
Asn Leu Val His Gly Ser His Cys Ser Lys Tyr Arg Leu Ala Arg Ile
        210                    215                    220
Pro Gly Thr Asn Ala Phe Val Gly Ile Val Asn Glu Thr Cys Asp Ser
225                    230                    235                    240
Leu Ala Phe Cys Ala Cys Ser Met Val Asp Arg Leu Cys Leu Asn Cys
                245                    250                    255
His Arg Met Glu Gln Asn Glu Cys Glu Cys Pro Cys Glu Cys Pro Leu
                260                    265                    270
Glu Val Asn Glu Cys Thr Gly Asn Leu Thr Asn Ala Glu Asn Arg Asn
                275                    280                    285
Pro Ser Cys Glu Val His Gln Glu Pro Val Thr Tyr Thr Ala Ile Asp
        290                    295                    300
Pro Gly Leu Gln Asp Ala Leu His Gln Cys Val Asn Ser Arg Cys Ser
305                    310                    315                    320
Gln Arg Leu Glu Ser Gly Asp Cys Phe Gly Val Leu Asp Cys Glu Trp
                325                    330                    335
Cys Met Val Asp Ser Asp Gly Lys Thr His Leu Asp Lys Pro Tyr Cys
                340                    345                    350
Ala Pro Gln Lys Glu Cys Phe Gly Gly Ile Val Gly Ala Lys Ser Pro
                355                    360                    365
Tyr Val Asp Asp Met Gly Ala Ile Gly Asp Glu Val Ile Thr Leu Lys
        370                    375                    380


<210> 4257
<211> 1541
<212> DNA
<213> Homo sapiens

<400> 4257
agacgtcagt gccgtcgagg agctcttcag cgctgcgtac acgtgtaccc cagttcagtt
60
ttcttgacat cttcccaaaa gtcacctgca ggcctcccaa agaggtgata gacatggagc
120
tgagtgccct gaggagtgac acagagcctg ggatggatct ttgggagttc tgcagcgaaa
180
ctttccaaag accttaccag tatttaagac gattcaatcc aaacccagac cttaacccgg
240
ttcaagattc agaaaggttt tgccgaaggc cccccggagg aatgcctcca gcatttcctg
300
tttcactggg gggtaataaa cccatcctgg ccaaacctcc ggaactttgc tcggttcctg
360
aattatcagc tcagagattg tgaggcctct ctcttctgca atccgagttt tattggcgac
420
acactgaggg gcttcaagaa gttcgtggtg accttcatga tctttatggc aagagatttt
480
gccacaccat cactccacac ctctgaccaa agcccgggga agcacatggt caccatggat
540
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ggggttaggg aagaagatct agcgcccttc tccctccgga agaggtggga gtcggagcct
600
cacccatacg ttttcttcaa tgacgaccac acaaccatga cattcatcgg cttccatctg
660
cagcccaaca tcaacggcag tgtcgatgcc atcagtcact tgactgggaa ggtcatcaag
720
agagacgtca tgaccaggga cctgtaccag ggcctgctgc tccagagggt gcccttcaat
780
gtcgactttg ataaactgcc cagacacaag aaacttgaga ggctctgcct gaccttaggg
840
atcccccagg ccaccgaccc cgacaaaacg tatgagctca caaccgacaa tatgcttaaa
900
atccttgcca tcgagatgcg gttccggtgt gggatccccg ttatcatcat gggagaaact
960
ggctgtggga aaaccaggct tattaaattc cttagcgacc tgcggcgtgg tggtaccaat
1020
gctgacacca taaagctggt caaggtgcac ggaggaacaa ctgcagacat gatctactcc
1080
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<210> 4258
<211> 314
<212> PRT
<213> Homo sapiens

<400> 4258
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Asp Gln Ser Pro Gly Lys His Met Val Thr Met Asp Gly Val Arg Glu
            20   25   30
Glu Asp Leu Ala Pro Phe Ser Leu Arg Lys Arg Trp Glu Ser Glu Pro
        35   40   45
His Pro Tyr Val Phe Phe Asn Asp Asp His Thr Thr Met Thr Phe Ile
    50   55   60
Gly Phe His Leu Gln Pro Asn Ile Asn Gly Ser Val Asp Ala Ile Ser
65   70   75   80
His Leu Thr Gly Lys Val Ile Lys Arg Asp Val Met Thr Arg Asp Leu
                85   90   95
Tyr Gln Gly Leu Leu Leu Gln Arg Val Pro Phe Asn Val Asp Phe Asp

3455

```
            100                    105                    110
Lys Leu Pro Arg His Lys Lys Leu Glu Arg Leu Cys Leu Thr Leu Gly
        115                    120                    125
Ile Pro Gln Ala Thr Asp Pro Asp Lys Thr Tyr Glu Leu Thr Thr Asp
    130                    135                    140
Asn Met Leu Lys Ile Leu Ala Ile Glu Met Arg Phe Arg Cys Gly Ile
145                    150                    155                    160
Pro Val Ile Ile Met Gly Glu Thr Gly Cys Gly Lys Thr Arg Leu Ile
                165                    170                    175
Lys Phe Leu Ser Asp Leu Arg Arg Gly Gly Thr Asn Ala Asp Thr Ile
            180                    185                    190
Lys Leu Val Lys Val His Gly Gly Thr Thr Ala Asp Met Ile Tyr Ser
        195                    200                    205
Arg Val Arg Glu Ala Glu Asn Val Ala Phe Ala Asn Lys Asp Gln His
    210                    215                    220
Gln Leu Asp Thr Ile Leu Phe Phe Asp Glu Ala Asn Thr Thr Glu Ala
225                    230                    235                    240
Ile Ser Cys Ile Lys Glu Val Leu Cys Asp His Met Val Asp Gly Gln
                245                    250                    255
Pro Leu Ala Glu Asp Ser Gly Leu His Ile Ile Ala Ala Cys Asn Pro
            260                    265                    270
Tyr Pro Glu Asn Ser Glu Glu Met Ile Cys Arg Leu Glu Ser Ala Gly
        275                    280                    285
Leu Gly Tyr Arg Val Ser Met Glu Glu Thr Ala Asp Arg Leu Gly Ser
    290                    295                    300
Ile Pro Leu Gly Tyr Thr Cys Thr Gln Arg
305                    310
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<210> 4259
<211> 377
<212> DNA
<213> Homo sapiens

<400> 4259
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120
gaagcgcagc ccgttgtggt gatacgagcc ggagatgcct tctgcaggga ctgtttcaag
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gccttctacg tccacaagtt cagagccatg ctgggcaaga accggctcat ctttccaggc
240
gagaaggtgc tcttggcgtg gtctgggggg ccttcgtcca gctccatggt ctggcaggtt
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360
gttgacgagg gagcagc
377
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<210> 4260
<211> 125
<212> PRT
<213> Homo sapiens
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<400> 4260
Ser Ala Thr Gly Pro Gly Val Pro Met Cys Gln Val Gly Glu Asp Tyr
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Gly Glu Pro Ala Pro Glu Glu Pro Pro Pro Ala Pro Arg Pro Ser Arg
              20   25   30
Glu Gln Lys Cys Val Lys Cys Lys Glu Ala Gln Pro Val Val Val Ile
           35   40   45
Arg Ala Gly Asp Ala Phe Cys Arg Asp Cys Phe Lys Ala Phe Tyr Val
        50   55   60
His Lys Phe Arg Ala Met Leu Gly Lys Asn Arg Leu Ile Phe Pro Gly
65   70   75   80
Glu Lys Val Leu Leu Ala Trp Ser Gly Gly Pro Ser Ser Ser Ser Met
              85   90   95
Val Trp Gln Val Leu Glu Gly Leu Ser Gln Asp Ser Ala Lys Arg Leu
             100   105   110
Arg Phe Val Ala Gly Val Ile Phe Val Asp Glu Gly Ala
            115   120   125

<210> 4261
<211> 592
<212> DNA
<213> Homo sapiens

<400> 4261
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atactcttga cttaaatatg tttgtttata aagacaaatg gagaaatcaa ttttttttccc
120
tgaattctta ggagcacttt agtgaataaa gaacctgaca gtatgctggc ccacatgttt
180
aaggacaaag gtgtctgggg aaataagcaa gatcatagag gagctttctt aattgaccga
240
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300
gatggcatta atttattggg tgtgttagaa gaagcaagat tttttggtat tgactcattg
360
attgaacacc tagaagtggc aataaagaat tctcaaccac cggaggatca ttcaccaata
420
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480
cagggtttga acttcagtgg tgctgatctt tctcgtttgg accttcgata cattaacttc
540
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592

<210> 4262
<211> 156
<212> PRT
<213> Homo sapiens

<400> 4262
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 1   5   10   15
His Met Phe Lys Asp Lys Gly Val Trp Gly Asn Lys Gln Asp His Arg

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             20                    25                    30
Gly Ala Phe Leu Ile Asp Arg Ser Pro Glu Tyr Phe Glu Pro Ile Leu
         35                    40                    45
Asn Tyr Leu Arg His Gly Gln Leu Ile Val Asn Asp Gly Ile Asn Leu
     50                    55                    60
Leu Gly Val Leu Glu Glu Ala Arg Phe Phe Gly Ile Asp Ser Leu Ile
65                    70                    75                    80
Glu His Leu Glu Val Ala Ile Lys Asn Ser Gln Pro Pro Glu Asp His
                 85                    90                    95
Ser Pro Ile Ser Arg Lys Glu Phe Val Arg Phe Leu Leu Ala Thr Pro
             100                   105                   110
Thr Lys Ser Glu Leu Arg Cys Gln Gly Leu Asn Phe Ser Gly Ala Asp
         115                   120                   125
Leu Ser Arg Leu Asp Leu Arg Tyr Ile Asn Phe Lys Met Ala Asn Leu
     130                   135                   140
Ser Arg Cys Asn Leu Ala His Ala Asn Leu Cys Cys
145                   150                   155
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<210> 4263
<211> 7710
<212> DNA
<213> Homo sapiens

<400> 4263
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120
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180
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360
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480
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720
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caagaagaat atgaaggcat ttgtaagctg ctgcaggctg ccaaagtggc ccttcaagat
900
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cgagagaaaa agttagcaga agcctatgag caaatagaga aagatcttac tctgcttggt
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3462

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<212> PRT
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            20   25   30
Met Gln Lys Phe Leu Gly Ser Tyr Phe Ile Thr Trp Asp Glu Asp Met
         35   40   45
Phe Asp Glu Glu Thr Gly Glu Gly Pro Leu Val Asn Thr Ser Asp Leu
      50   55   60
Asn Glu Glu Leu Gly Gln Val Glu Tyr Ile Phe Thr Asp Lys Thr Gly
65   70   75   80
Thr Leu Thr Glu Asn Asn Met Glu Phe Lys Glu Cys Cys Ile Glu Gly
               85   90   95
His Val Tyr Val Pro His Val Ile Cys Asn Gly Gln Val Leu Pro Glu
            100   105   110
Ser Ser Gly Ile Asp Met Ile Asp Ser Ser Pro Ser Val Asn Gly Arg
         115   120   125
Glu Arg Glu Glu Leu Phe Phe Arg Ala Leu Cys Leu Cys His Thr Val
      130   135   140
Gln Val Lys Asp Asp Asp Ser Val Asp Gly Pro Arg Lys Ser Pro Asp
145   150   155   160
Gly Gly Lys Ser Cys Val Tyr Ile Ser Ser Ser Pro Asp Glu Val Ala
               165   170   175
Leu Val Glu Gly Val Gln Arg Leu Gly Phe Thr Tyr Leu Arg Leu Lys
            180   185   190
Asp Asn Tyr Met Glu Ile Leu Asn Arg Glu Asn His Ile Glu Arg Phe
         195   200   205
Glu Leu Leu Glu Ile Leu Ser Phe Asp Ser Val Arg Arg Arg Met Ser
      210   215   220
Val Ile Val Lys Ser Ala Thr Gly Glu Ile Tyr Leu Phe Cys Lys Gly
225   230   235   240
Ala Asp Ser Ser Ile Phe Pro Arg Val Ile Glu Gly Lys Val Asp Gln
               245   250   255
Ile Arg Ala Arg Val Glu Arg Asn Ala Val Glu Gly Leu Arg Thr Leu
            260   265   270
Cys Val Ala Tyr Lys Arg Leu Ile Gln Glu Glu Tyr Glu Gly Ile Cys

3463

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Ala Thr Ala Val Glu Asp Arg Leu Gln Glu Lys Ala Ala Asp Thr Ile
                325                     330                     335
Glu Ala Leu Gln Lys Ala Gly Ile Lys Val Trp Val Leu Thr Gly Asp
                340                     ·345                    350
Lys Met Glu Thr Ala Ala Ala Thr Cys Tyr Ala Cys Lys Leu Phe Arg
                355                     360                     365
Arg Asn Thr Gln Leu Leu Glu Leu Thr Thr Lys Arg Ile Glu Glu Gln
    370                     375                     380
Ser Leu His Asp Val Leu Phe Glu Leu Ser Lys Thr Val Leu Arg His
385                     390                     395                     400
Ser Gly Ser Leu Thr Arg Asp Asn Leu Ser Gly Leu Ser Ala Asp Met
                405                     410                     415
Gln Asp Tyr Gly Leu Ile Ile Asp Gly Ala Ala Leu Ser Leu Ile Met
                420                     425                     430
Lys Pro Arg Glu Asp Gly Ser Ser Gly Asn Tyr Arg Glu Leu Phe Leu
                435                     440                     445
Glu Ile Cys Arg Ser Cys Ser Ala Val Leu Cys Cys Arg Met Ala Pro
    450                     455                     460
Leu Gln Lys Ala Gln Ile Val Lys Leu Ile Lys Phe Ser Lys Glu His
465                     470                     475                     480
Pro Ile Thr Leu Ala Ile Gly Asp Gly Ala Asn Asp Val Ser Met Ile
                485                     490                     495
Leu Glu Ala His Val Gly Ile Gly Val Ile Gly Lys Glu Gly Arg Gln
                500                     505                     510
Ala Ala Arg Asn Ser Asp Tyr Ala Ile Pro Lys Phe Lys His Leu Lys
                515                     520                     525
Lys Met Leu Leu Val His Gly His Phe Tyr Tyr Ile Arg Ile Ser Glu
    530                     535                     540
Leu Val Gln Tyr Phe Phe Tyr Lys Asn Val Cys Phe Ile Phe Pro Gln
545                     550                     555                     560
Phe Leu Tyr Gln Phe Phe Cys Gly Phe Ser Gln Gln Thr Val His Asp
                565                     570                     575
Thr Ala Tyr Leu Thr Leu Tyr Asn Ile Ser Phe Thr Ser Leu Pro Ile
                580                     585                     590
Leu Leu Tyr Ser Leu Met Glu Gln His Val Gly Ile Asp Val Leu Lys
    595                     600                     605
Arg Asp Pro Thr Leu Tyr Arg Asp Val Ala Lys Asn Ala Leu Leu Arg
    610                     615                     620
Trp Arg Val Phe Ile Tyr Trp Thr Leu Leu Gly Leu Phe Asp Ala Leu
625                     630                     635                     640
Val Phe Phe Phe Gly Ala Tyr Phe Val Phe Glu Asn Thr Thr Val Thr
                645                     650                     655
Ser Asn Gly Gln Ile Phe Gly Asn Trp Thr Phe Gly Thr Leu Val Phe
                660                     665                     670
Thr Val Met Val Phe Thr Val Thr Leu Lys Leu Ala Leu Asp Thr His
                675                     680                     685
Tyr Trp Thr Trp Ile Asn His Phe Val Ile Trp Gly Ser Leu Leu Phe
    690                     695                     700
Tyr Val Val Phe Ser Leu Leu Trp Gly Gly Val Ile Trp Pro Phe Leu
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3464

```
           705                       710                       715                       720
           Asn Tyr Gln Arg Met Tyr Tyr Val Phe Ile Gln Met Leu Ser Ser Gly
                               725                       730                       735
           Pro Ala Trp Leu Ala Ile Val Leu Leu Val Thr Ile Ser Leu Leu Pro
                           740                       745                       750
           Asp Val Leu Lys Lys Val Leu Cys Arg Gln Leu Trp Pro Thr Ala Thr
                       755                       760                       765
           Glu Arg Val Gln Thr Lys Ser Gln Cys Leu Ser Val Glu Gln Ser Thr
                   770                       775                       780
           Ile Phe Met Leu Ser Gln Thr Ser Ser Ser Leu Ser Phe
           785                       790                       795
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<210> 4265
<211> 2422
<212> DNA
<213> Homo sapiens
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aatgtcatgc tggactgtgg aatgcacatg ggcttcaatg acgaccgacg cttccctgac
180
ttctcctaca tcacccagaa cggccgccta acagacttcc tggactgtgt gatcattagc
240
cacttccacc tggaccactg cggggcactc ccctacttca gcgagatggt gggctacgac
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360
cgcaagatcg ccgtagacaa gaagggcgag gccaacttct tcacctccca gatgatcaaa
420
gactgcatga agaaggtggt ggctgtccac ctccaccaga cggtccaggt agatgatgag
480
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540
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720
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900
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960
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1020
ctgcacgctg ggcagtccct gcagatcttc cggaaatggg ccggaaacga aaagaacatg
1080
```

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gtcatcatgc ccggctactg cgtgcagggc accgtcggcc acaagatcct cagcgggcag
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2422
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<210> 4266
<211> 613
<212> PRT
<213> Homo sapiens
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<400> 4266
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Ile Arg Val Thr Pro Leu Gly Ala Gly Gln Asp Val Gly Arg Ser Cys
            20                  25                   30
Ile Leu Val Ser Ile Ala Gly Lys Asn Val Met Leu Asp Cys Gly Met
            35                  40                   45
His Met Gly Phe Asn Asp Asp Arg Arg Phe Pro Asp Phe Ser Tyr Ile
            50                  55                   60
Thr Gln Asn Gly Arg Leu Thr Asp Phe Leu Asp Cys Val Ile Ile Ser
65                  70                  75                   80
His Phe His Leu Asp His Cys Gly Ala Leu Pro Tyr Phe Ser Glu Met
                    85                  90                   95
Val Gly Tyr Asp Gly Pro Ile Tyr Met Thr His Pro Thr Gln Ala Ile
            100                 105                  110
Cys Pro Ile Leu Leu Glu Asp Tyr Arg Lys Ile Ala Val Asp Lys Lys
            115                 120                  125
Gly Glu Ala Asn Phe Phe Thr Ser Gln Met Ile Lys Asp Cys Met Lys
    130                 135                 140
Lys Val Val Ala Val His Leu His Gln Thr Val Gln Val Asp Asp Glu
145                 150                 155                  160
Leu Glu Ile Lys Ala Tyr Tyr Ala Gly His Val Leu Gly Ala Ala Met
                    165                 170                  175
Phe Gln Ile Lys Val Gly Ser Glu Ser Val Val Tyr Thr Gly Asp Tyr
            180                 185                  190
Asn Met Thr Pro Asp Arg His Leu Gly Ala Ala Trp Ile Asp Lys Cys
            195                 200                  205
Arg Pro Asn Leu Leu Ile Thr Glu Ser Thr Tyr Ala Thr Thr Ile Arg
    210                 215                 220
Asp Ser Lys Arg Cys Arg Glu Arg Asp Phe Leu Lys Lys Val His Glu
225                 230                 235                  240
Thr Val Glu Arg Gly Gly Lys Val Leu Ile Pro Val Phe Ala Leu Gly
                    245                 250                  255
Arg Ala Gln Glu Leu Cys Ile Leu Leu Glu Thr Phe Trp Glu Arg Met
            260                 265                  270
Asn Leu Lys Val Pro Ile Tyr Phe Ser Thr Gly Leu Thr Glu Lys Ala
            275                 280                  285
Asn His Tyr Tyr Lys Leu Phe Ile Pro Trp Thr Asn Gln Lys Ile Arg
    290                 295                 300
Lys Thr Phe Val Gln Arg Asn Met Phe Glu Phe Lys His Ile Lys Ala
305                 310                 315                  320
Phe Asp Arg Ala Phe Ala Asp Asn Pro Gly Pro Met Val Val Phe Ala
                    325                 330                  335
Thr Pro Gly Met Leu His Ala Gly Gln Ser Leu Gln Ile Phe Arg Lys
            340                 345                  350
Trp Ala Gly Asn Glu Lys Asn Met Val Ile Met Pro Gly Tyr Cys Val
            355                 360                  365
Gln Gly Thr Val Gly His Lys Ile Leu Ser Gly Gln Arg Lys Leu Glu
    370                 375                 380
Met Glu Gly Arg Gln Val Leu Glu Val Lys Met Gln Val Glu Tyr Met
385                 390                 395                  400
Ser Phe Ser Ala His Ala Asp Ala Lys Gly Ile Met Gln Leu Val Gly
                    405                 410                  415
Gln Ala Glu Pro Glu Ser Val Leu Leu Val His Gly Glu Ala Lys Lys
            420                 425                  430
Met Glu Phe Leu Lys Gln Lys Ile Glu Gln Glu Leu Arg Val Asn Cys
```

```
          435                    440                    445
Tyr Met Pro Ala Asn Gly Glu Thr Val Thr Leu Pro Thr Ser Pro Ser
    450                    455                    460
Ile Pro Val Gly Ile Ser Leu Gly Leu Leu Lys Arg Glu Met Ala Gln
465                    470                    475                    480
Gly Leu Leu Pro Glu Ala Lys Lys Pro Arg Leu Leu His Gly Thr Leu
               485                    490                    495
Ile Met Lys Asp Ser Asn Phe Arg Leu Val Ser Ser Glu Gln Ala Leu
               500                    505                    510
Lys Glu Leu Gly Leu Ala Glu His Gln Leu Arg Phe Thr Cys Arg Val
           515                    520                    525
His Leu His Asp Thr Arg Lys Glu Gln Glu Thr Ala Leu Arg Val Tyr
       530                    535                    540
Ser His Leu Lys Ser Val Leu Lys Asp His Cys Val Gln His Leu Pro
545                    550                    555                    560
Asp Gly Ser Val Thr Val Glu Ser Val Leu Leu Gln Ala Ala Ala Pro
               565                    570                    575
Ser Glu Asp Pro Gly Thr Lys Val Leu Leu Val Ser Trp Thr Tyr Gln
           580                    585                    590
Asp Glu Glu Leu Gly Ser Phe Leu Thr Ser Leu Leu Lys Lys Gly Leu
       595                    600                    605
Pro Gln Ala Pro Ser
    610


<210> 4267
<211> 2230
<212> DNA
<213> Homo sapiens

<400> 4267
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120
tggattaaga cagaagatgg ctggaagaga tgtgaatctt gtagtcagaa acttgaaaga
180
gagaataacc attgtaacat cagtcacagc attatcttaa atagtgaaga tggagaaata
240
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gacacaaata ctcaaagttt ttatcatgaa aaatggatct atgtccataa agaaagcaca
360
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420
gcaattcaag atatccgaag gttcaattat gtggtcaaac tgttgcagct aattgcaaaa
480
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660
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720
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3468

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840
gtgaccccca cgttgtatat gcttagtgaa gacagacagc tgtggaagaa gctttgtcag
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taccattttg ctgaaaagca gttttgtaga catttgatcc tttcagaaaa aggtcatatt
960
gaatggaagt tgatgtactt tgcacttcag aaacattacc cagcgaagga gcagtacgga
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1140
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1320
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1560
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2100
gcataggata gaaacgtatt gttgtatatt tccatttttg aatagggtca aggagcctaa
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2230
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<210> 4268
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<211> 210
<212> PRT
<213> Homo sapiens

<400> 4268
Ala Gly Ala Pro Val Gly His Trp Gly Thr Arg Ala Arg Gln Val Lys
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Thr Gly Gly Cys Arg Arg Ala Arg Arg Thr Met Pro Phe Leu Gly Gln
            20                  25                  30
Asp Trp Arg Ser Pro Gly Trp Ser Trp Ile Lys Thr Glu Asp Gly Trp
        35                  40                  45
Lys Arg Cys Glu Ser Cys Ser Gln Lys Leu Glu Arg Glu Asn Asn His
    50                  55                  60
Cys Asn Ile Ser His Ser Ile Ile Leu Asn Ser Glu Asp Gly Glu Ile
65                  70                  75                  80
Leu Asn Asn Glu Glu His Glu Tyr Ala Ser Lys Lys Arg Lys Lys Asp
                85                  90                  95
His Phe Arg Asn Asp Thr Asn Thr Gln Ser Phe Tyr His Glu Lys Trp
            100                 105                 110
Ile Tyr Val His Lys Glu Ser Thr Lys Glu Arg His Gly Tyr Cys Thr
            115                 120                 125
Leu Gly Glu Thr Phe Asn Arg Leu Asp Phe Ser Ser Ala Ile Gln Asp
        130                 135                 140
Ile Arg Arg Phe Asn Tyr Val Val Lys Leu Leu Gln Leu Ile Ala Lys
145                 150                 155                 160
Ser Gln Leu Thr Ser Leu Ser Gly Val Ala Gln Lys Asn Tyr Phe Asn
                165                 170                 175
Ile Leu Asp Lys Ile Val Gln Lys Val Leu Asp Asp His His Asn Pro
            180                 185                 190
Arg Leu Ile Lys Asp Leu Leu Gln Asp Leu Ser Ser Thr Leu Xaa His
        195                 200                 205
Ser Tyr
    210


<210> 4269
<211> 5748
<212> DNA
<213> Homo sapiens

<400> 4269
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300
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360
attatgaaaa aacgccgtgg atcttcaaag gggcatgata cacacaaggg gaaaccagtg
420
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600
tcattcactg tgagggatgt tgaacactat gttggttctg acaaagagat tgatgtgatt
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·2040
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3660
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4260
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4320
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4380
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4440
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4500
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4560
tccccccacc tccatttggc actacccaag tggagtgtac ccttgccctt tccacctgta
4620
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4680
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4740
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4800
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4860
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4920
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4980
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tctgtggagc tgaaacccag cctctgtttg actgggtttc atttagctta gttgggttct
5220
tagagccccc tgtttgttgt tttgtgttgt ttccaatgaa aagcaagttt accctcagag
5280
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ttatgctttt ccaaagaggc tgatgtcttt gttttgttt ttttaatgt ttcaggttct
5340
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5400
gatagttacc cctgatctcc agtccctagc tggggctgg acaggggaa gggagagagg
5460
atttctattc acctttaata tatttttaca aaaaagcaa acaatttaaa aacaagccca
5520
ccgcttctgt acatgtctaa atatattttt agaagtgggt aggattgtga atttctgatg
5580
cagggccttt ttataaatag gttagggtag catcattcag acttctctgt tgtttttgtc
5640
cctgtctttt tcttatgttg tgttactaat gtaatttata tttttttag atcctccctt
5700
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5748


<210> 4270
<211> 1084
<212> PRT
<213> Homo sapiens

<400> 4270
Ala Ser Phe Thr Gly Gly Arg Thr Asn Asn Ala Glu Thr Val Gly Lys
1               5                   10                  15
Ser Pro Ala Tyr Arg Arg Cys Ser Met Asn Arg Ser Arg Ala Ile Val
            20                  25                  30
Gln Arg Gly Arg Val Leu Pro Pro Ala Pro Leu Asp Thr Thr Asn
        35                  40                  45
Leu Ala Gly Arg Arg Thr Leu Gln Gly Arg Ala Lys Met Ala Ser Val
    50                  55                  60
Pro Val Tyr Cys Leu Cys Arg Leu Pro Tyr Asp Val Thr Arg Phe Met
65                  70                  75                  80
Ile Glu Cys Asp Met Cys Gln Asp Trp Phe His Gly Ser Cys Val Gly
                85                  90                  95
Val Glu Glu Glu Lys Ala Ala Asp Ile Asp Leu Tyr His Cys Pro Asn
            100                 105                 110
Cys Glu Val Leu His Gly Pro Ser Ile Met Lys Lys Arg Arg Gly Ser
        115                 120                 125
Ser Lys Gly His Asp Thr His Lys Gly Lys Pro Val Lys Thr Gly Ser
    130                 135                 140
Pro Thr Phe Val Arg Glu Leu Arg Ser Arg Thr Phe Asp Ser Ser Asp
145                 150                 155                 160
Glu Val Ile Leu Lys Pro Thr Gly Asn Gln Leu Thr Val Glu Phe Leu
                165                 170                 175
Glu Glu Asn Ser Phe Ser Val Pro Ile Leu Val Leu Lys Lys Asp Gly
            180                 185                 190
Leu Gly Met Thr Leu Pro Ser Pro Ser Phe Thr Val Arg Asp Val Glu
        195                 200                 205
His Tyr Val Gly Ser Asp Lys Glu Ile Asp Val Ile Asp Val Thr Arg
    210                 215                 220
Gln Ala Asp Cys Lys Met Lys Leu Gly Asp Phe Val Lys Tyr Tyr Tyr
225                 230                 235                 240
Ser Gly Lys Arg Glu Lys Val Leu Asn Val Ile Ser Leu Glu Phe Ser
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                    245                    250                    255
Asp Thr Arg Leu Ser Asn Leu Val Glu Thr Pro Lys Ile Val Arg Lys
            260                    265                    270
Leu Ser Trp Val Glu Asn Leu Trp Pro Glu Glu Cys Val Phe Glu Arg
            275                    280                    285
Pro Asn Val Gln Lys Tyr Cys Leu Met Ser Val Arg Asp Ser Tyr Thr
        290                    295                    300
Asp Phe His Ile Asp Phe Gly Gly Thr Ser Val Trp Tyr His Val Leu
305                    310                    315                    320
Lys Gly Glu Lys Ile Phe Tyr Leu Ile Arg Pro Thr Asn Ala Asn Leu
                325                    330                    335
Thr Leu Phe Glu Cys Trp Ser Ser Ser Ser Asn Gln Asn Glu Met Phe
            340                    345                    350
Phe Gly Asp Gln Val Asp Lys Cys Tyr Lys Cys Ser Val Lys Gln Gly
            355                    360                    365
Gln Thr Leu Phe Ile Pro Thr Gly Trp Ile His Ala Val Leu Thr Pro
        370                    375                    380
Val Asp Cys Leu Ala Phe Gly Gly Asn Phe Leu His Ser Leu Asn Ile
385                    390                    395                    400
Glu Met Gln Leu Lys Ala Tyr Glu Ile Glu Lys Arg Leu Ser Thr Ala
                405                    410                    415
Asp Leu Phe Arg Phe Pro Asn Phe Glu Thr Ile Cys Trp Tyr Val Gly
            420                    425                    430
Lys His Ile Leu Asp Ile Phe Arg Gly Leu Arg Glu Asn Arg Arg His
            435                    440                    445
Pro Ala Ser Tyr Leu Val His Gly Gly Lys Ala Leu Asn Leu Ala Phe
        450                    455                    460
Arg Ala Trp Thr Arg Lys Glu Ala Leu Pro Asp His Glu Asp Glu Ile
465                    470                    475                    480
Pro Glu Thr Val Arg Thr Val Gln Leu Ile Lys Asp Leu Ala Arg Glu
                485                    490                    495
Ile Arg Leu Val Glu Asp Ile Phe Gln Gln Asn Val Gly Lys Thr Ser
            500                    505                    510
Asn Ile Phe Gly Leu Gln Arg Ile Phe Pro Ala Gly Ser Ile Pro Leu
            515                    520                    525
Thr Arg Pro Ala His Ser Thr Ser Val Ser Met Ser Arg Leu Ser Leu
        530                    535                    540
Pro Ser Lys Asn Gly Ser Lys Lys Lys Gly Leu Lys Pro Lys Glu Leu
545                    550                    555                    560
Phe Lys Lys Ala Glu Arg Lys Gly Lys Glu Ser Ser Ala Leu Gly Pro
                565                    570                    575
Ala Gly Gln Leu Ser Tyr Asn Leu Met Asp Thr Tyr Ser His Gln Ala
            580                    585                    590
Leu Lys Thr Gly Ser Phe Gln Lys Ala Lys Phe Asn Ile Thr Gly Ala
            595                    600                    605
Cys Leu Asn Asp Ser Asp Asp Asp Ser Pro Asp Leu Asp Leu Asp Gly
        610                    615                    620
Asn Glu Ser Pro Leu Ala Leu Leu Met Ser Asn Gly Ser Thr Lys Arg
625                    630                    635                    640
Val Lys Ser Leu Ser Lys Ser Arg Arg Thr Lys Ile Ala Lys Lys Val
                645                    650                    655
Asp Lys Ala Arg Leu Met Ala Glu Gln Val Met Glu Asp Glu Phe Asp
            660                    665                    670
Leu Asp Ser Asp Asp Glu Leu Gln Ile Asp Glu Arg Leu Gly Lys Glu
```

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                 675                    680                    685
Lys Ala Thr Leu Ile Ile Arg Pro Lys Phe Pro Arg Lys Leu Pro Arg
     690                    695                    700
Ala Lys Pro Cys Ser Asp Pro Asn Arg Val Arg Glu Pro Gly Glu Val
705                    710                    715                    720
Glu Phe Asp Ile Glu Glu Asp Tyr Thr Thr Asp Glu Asp Met Val Glu
                 725                    730                    735
Gly Val Glu Gly Lys Leu Gly Asn Gly Ser Gly Ala Gly Gly Ile Leu
                 740                    745                    750
Asp Leu Leu Lys Ala Ser Arg Gln Val Gly Gly Pro Asp Tyr Ala Ala
     755                    760                    765
Leu Thr Glu Ala Pro Ala Ser Pro Ser Thr Gln Glu Ala Ile Gln Gly
     770                    775                    780
Met Leu Cys Met Ala Asn Leu Gln Ser Ser Ser Ser Ser Pro Ala Thr
785                    790                    795                    800
Ser Ser Leu Gln Ala Trp Trp Thr Gly Gly Gln Asp Arg Ser Ser Gly
                 805                    810                    815
Ser Ser Ser Ser Gly Leu Gly Thr Val Ser Asn Ser Pro Ala Ser Gln
                 820                    825                    830
Arg Thr Pro Gly Lys Arg Pro Ile Lys Arg Pro Ala Tyr Trp Arg Thr
                 835                    840                    845
Glu Ser Glu Glu Glu Glu Glu Asn Ala Ser Leu Asp Glu Gln Asp Ser
     850                    855                    860
Leu Gly Ala Cys Phe Lys Asp Ala Glu Tyr Ile Tyr Pro Ser Leu Glu
865                    870                    875                    880
Ser Asp Asp Asp Asp Pro Ala Leu Lys Ser Arg Pro Lys Lys Lys Lys
                 885                    890                    895
Asn Ser Asp Asp Ala Pro Trp Ser Pro Lys Ala Arg Val Thr Pro Thr
                 900                    905                    910
Leu Pro Lys Gln Asp Arg Pro Val Arg Glu Gly Thr Arg Val Ala Ser
     915                    920                    925
Ile Glu Thr Gly Leu Ala Ala Ala Ala Ala Lys Leu Ala Gln Gln Glu
     930                    935                    940
Leu Gln Lys Ala Gln Lys Lys Lys Tyr Ile Lys Lys Lys Pro Leu Leu
945                    950                    955                    960
Lys Glu Val Glu Gln Pro Arg Pro Gln Asp Ser Asn Leu Ser Leu Thr
                 965                    970                    975
Val Pro Ala Pro Thr Val Ala Ala Thr Pro Gln Leu Val Thr Ser Ser
                 980                    985                    990
Ser Pro Leu Pro Pro Pro Glu Pro Lys Gln Glu Ala Leu Ser Gly Ser
     995                    1000                   1005
Leu Ala Asp His Glu Tyr Thr Ala Arg Pro Asn Ala Phe Gly Met Ala
     1010                   1015                   1020
Gln Ala Asn Arg Ser Thr Thr Pro Met Ala Pro Gly Val Phe Leu Thr
1025                   1030                   1035                   1040
Gln Arg Arg Pro Ser Val Gly Ser Gln Ser Asn Gln Ala Gly Gln Gly
                 1045                   1050                   1055
Lys Arg Pro Lys Lys Gly Leu Ala Thr Ala Lys Gln Arg Leu Gly Arg
                 1060                   1065                   1070
Ile Leu Lys Ile His Arg Asn Gly Lys Leu Leu Leu
     1075                   1080
```

<210> 4271
<211> 588

<212> DNA
<213> Homo sapiens

<400> 4271
accatgtcat ttcctttgaa ctcaccggga cagcaatctg gattaaagat actacgacaa
60
ctgactactg attttgtcca tcactacatt gttgccaata acttttcaga gcttttccat
120
ttgctgtcct caagaaattg caaaaccaga aatcttgtta tgaaactact tttaaatatg
180
tctgaaaatc caactgcagc cagagacatg atcaatatga aggcattggc agcattaaaa
240
ctcatcttta accacaaaga ggcaaaagcc aatcttgtta gtggtgtggc catatttatt
300
aacataaagg agcatatcag aaaaggctca attgtagtta ataaatatgg ccacaccact
360
aacaagattg gcttttgcct ctttctggtt aaagatgagt tttaatgctg ccaatgcctt
420
catattgatc atgtctctgg ctgcagttgg attttcagac atatttaaaa gtagtttcaa
480
aacaagattt ctggttttgc aatttcctga ggacagcaaa tggaaaagct ctgaaaagta
540
attggcaaca atgtagtgat ggacaaaatc agtagtcagt tgtccgtc
588

<210> 4272
<211> 134
<212> PRT
<213> Homo sapiens

<400> 4272
Thr Met Ser Phe Pro Leu Asn Ser Pro Gly Gln Gln Ser Gly Leu Lys
1   5   10   15
Ile Leu Arg Gln Leu Thr Thr Asp Phe Val His His Tyr Ile Val Ala
            20   25   30
Asn Asn Phe Ser Glu Leu Phe His Leu Leu Ser Ser Arg Asn Cys Lys
            35   40   45
Thr Arg Asn Leu Val Met Lys Leu Leu Leu Asn Met Ser Glu Asn Pro
        50   55   60
Thr Ala Ala Arg Asp Met Ile Asn Met Lys Ala Leu Ala Ala Leu Lys
65   70   75   80
Leu Ile Phe Asn His Lys Glu Ala Lys Ala Asn Leu Val Ser Gly Val
                85   90   95
Ala Ile Phe Ile Asn Ile Lys Glu His Ile Arg Lys Gly Ser Ile Val
            100   105   110
Val Asn Lys Tyr Gly His Thr Thr Asn Lys Ile Gly Phe Cys Leu Phe
        115   120   125
Leu Val Lys Asp Glu Phe
        130

<210> 4273
<211> 2081
<212> DNA
<213> Homo sapiens

<400> 4273
nggatggatt agccattgtt cgagtgggtg gatgggtgga tgaatagatg ggtggaggat
60
agataggtgg gtgtatgggt gggtggatgg attgatgcat ggatggatgg gctgcccatt
120
gagtaggtgc atgagtggat aaatgggtgg gtgggtaggt gaatagatgt atagatttat
180
aatagggggga agggtggatt ggtagatggg tagatggagg gatacattgc tgtgtggata
240
ggtgggtgaa tggatgaagg agggagggat gggcaggtag atggatagat tagtggatgg
300
atgggtggat gggctgacaa atggcttgtt cccagactgt ttgtccttgg gtggagtcat
360
gcaggtatct attgcagctg ggcctgaact gatatctgaa gagagaagtg gagacagcga
420
ccagacagat gaggatggag aacctggctc agaggcccag gcccaggccc agccctttgg
480
cagcaaaaaa aagcgcctcc tctccgtcca cgacttcgac ttcgagggag actcagatga
540
ctccactcag cctcaaggtc actccctgca cctgtcctca gtccctgagg ccagggacag
600
cccacagtcc ctcacagatg agtcctgctc agagaaggca gcccctcaca aggctgaggg
660
cctggaggag gctgatactg gggcctctgg gtgccactcc catccggaag agcagccgac
720
cagcatctca ccttccagac acggcgccct ggctgagctc tgcccgcctg gaggctccca
780
tagggaatgg ccctggggaa actgctgctg cactcgggtc ggatgtcatc aggaatgagc
840
agctgcccct gcagtacttg gccgatgtgg gacacctctg atgaggaaag catccgggct
900
cacgtgatgg cctcccacca ttccaagcgg agaggccggg cgtcttctga gagtcagggt
960
ctaggtgctg gagtgcgcac ggagcncgac gtagaggagg aggccctgag gaggaagctg
1020
gaggagctga ccagcaacgt cagtgaccag gagaccttcg tccgaggagg aggaagccaa
1080
ggacgaaaat gcagagccca acagggacaa atcagttggg cctctccccc aggcggaccc
1140
ggacggtggc acggctgccc atcaaaccaa cagacaggaa aaaagcccca ggaccctggg
1200
gaccccgtcc agtacaacag gaccacagat gaggagctgt cagagctgga ggacagagtg
1260
gcagtgacgg cctcagaagt ccagcaggca gagagcgagg tttcagacat tgaatccagg
1320
attgcagccc tgagggccgc agggctcacg gtgaagccct cgggaaagcc ccggaggaag
1380
tcaaacctcc cgatatttct ccctcgagtg gctgggaaac ttggcaagag accagaggac
1440
ccaaatgcag acccttcaag tgaggccaag gcaatggctg tgcctatctt ctgagaagaa
1500
agttcagtaa ttccctgaaa agtcaaggta aagatgatga ttctttttgat cggaaatcag
1560

3478

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tgtaccgagg ctcgctgaca cagagaaacc ccaacgcgag gaaaggaatg gccagccaca
1620
ccttcgcgaa acctgtggtg gcccaccagt cctaacggga caggacagag agacagagca
1680
gccctgcact gttttccctc caccacagcc atcctgtccc tcattggctc tgtgctttcc
1740
actatacaca gtcaccgtcc caatgagaaa caagaaggag caccctccac atggactccc
1800
acctgcaagt ggacagcgac attcagtcct gcactgctca cctgggttta ctgatgactc
1860
ctggctgccc caccatcctc tctgatctgt gagaaacagc taagctgctg tgacttccct
1920
ttaggacaat gttgtgtaaa tctttgaagg acacaccgaa gacctttata ctgtgatctt
1980
ttaccccttt cactcttggc tttcttatgt tgctttcatg aatggaatgg aaaaaagatg
2040
actcagttaa ggcaccaaaa aaaaaaaaaa aaaagtcgag c
2081


<210> 4274
<211> 235
<212> PRT
<213> Homo sapiens


<400> 4274
Met Ala Leu Gly Lys Leu Leu Leu His Ser Gly Arg Met Ser Ser Gly
  1               5                  10                  15
Met Ser Ser Cys Pro Cys Ser Thr Trp Pro Met Trp Asp Thr Ser Asp
                 20                  25                  30
Glu Glu Ser Ile Arg Ala His Val Met Ala Ser His His Ser Lys Arg
             35                  40                  45
Arg Gly Arg Ala Ser Ser Glu Ser Gln Gly Leu Gly Ala Gly Val Arg
         50                  55                  60
Thr Glu Xaa Asp Val Glu Glu Glu Ala Leu Arg Arg Lys Leu Glu Glu
65                  70                  75                  80
Leu Thr Ser Asn Val Ser Asp Gln Glu Thr Phe Val Arg Gly Gly Gly
                 85                  90                  95
Ser Gln Gly Arg Lys Cys Arg Ala Gln Gln Gly Gln Ile Ser Trp Ala
                100                 105                 110
Ser Pro Pro Gly Gly Pro Gly Arg Trp His Gly Cys Pro Ser Asn Gln
            115                 120                 125
Gln Thr Gly Lys Lys Pro Gln Asp Pro Gly Asp Pro Val Gln Tyr Asn
        130                 135                 140
Arg Thr Thr Asp Glu Glu Leu Ser Glu Leu Glu Asp Arg Val Ala Val
145                 150                 155                 160
Thr Ala Ser Glu Val Gln Gln Ala Glu Ser Glu Val Ser Asp Ile Glu
                165                 170                 175
Ser Arg Ile Ala Ala Leu Arg Ala Ala Gly Leu Thr Val Lys Pro Ser
            180                 185                 190
Gly Lys Pro Arg Arg Lys Ser Asn Leu Pro Ile Phe Leu Pro Arg Val
        195                 200                 205
Ala Gly Lys Leu Gly Lys Arg Pro Glu Asp Pro Asn Ala Asp Pro Ser
    210                 215                 220
Ser Glu Ala Lys Ala Met Ala Val Pro Ile Phe
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3479

225   230   235

<210> 4275
<211> 874
<212> DNA
<213> Homo sapiens

<400> 4275
atgcaggtgg ccctgggtgc acatctacga gatgccaggc gcgggcagag gctccgctca
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ggggcgcacg tagtggtcac tggacccccc aatgcgggca agagcagcct agtgaacctg
120
ctcagtcgga agcctgtgtc catcgtgtcc ccggagccag ggaccacccg tgacgtgctg
180
gagaccccag tcgacctggc cggatttcct gtgctgctga gcgacacggc tgggttgcgg
240
gagggcgtgg ggcccgtgga gcaggagggc gtgcggcgcg cccgggagag gctagagcag
300
gctgacctca ttctggccat gctggatgct tctgacctgg cctctccctc cagttgcaac
360
ttcctggcca ccgtcgtagc ctctgtggga gcccagagcc ccagtgacag cagccagcgc
420
ctcctcctgg tgctgaacaa gtcggacctg ctgtccccgg agggcccagg tcccggtcct
480
gacctgcccc cgcacctgct gctgtcctgt ctgacgggag aggggctgga cggcctcctg
540
gaggcgctga ggaaggagct agctgcagtg tgtggggacc cgtccacaga tcccccgctg
600
ctgacccgag caaggcacca gcaccacctc cagggttgcc tggatgccct cggccactac
660
aagcagtcaa aagacctggc cctggcggca gaggcgctgc gggtggcccg gggtcacctg
720
acccggctca caggtggagg gggtaccgag gagatcctgg acatcatctt ccaggacttc
780
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840
cctcggggga tctggaaaca gtttaggcca attg
874

<210> 4276
<211> 264
<212> PRT
<213> Homo sapiens

<400> 4276
Met Gln Val Ala Leu Gly Ala His Leu Arg Asp Ala Arg Arg Gly Gln
1   5   10   15
Arg Leu Arg Ser Gly Ala His Val Val Val Thr Gly Pro Pro Asn Ala
            20   25   30
Gly Lys Ser Ser Leu Val Asn Leu Leu Ser Arg Lys Pro Val Ser Ile
            35   40   45
Val Ser Pro Glu Pro Gly Thr Thr Arg Asp Val Leu Glu Thr Pro Val
        50   55   60
Asp Leu Ala Gly Phe Pro Val Leu Leu Ser Asp Thr Ala Gly Leu Arg

3480

```
65                    70                    75                    80
Glu Gly Val Gly Pro Val Glu Gln Glu Gly Val Arg Arg Ala Arg Glu
                85                    90                    95
Arg Leu Glu Gln Ala Asp Leu Ile Leu Ala Met Leu Asp Ala Ser Asp
            100                   105                   110
Leu Ala Ser Pro Ser Ser Cys Asn Phe Leu Ala Thr Val Val Ala Ser
        115                   120                   125
Val Gly Ala Gln Ser Pro Ser Asp Ser Ser Gln Arg Leu Leu Leu Val
    130                   135                   140
Leu Asn Lys Ser Asp Leu Leu Ser Pro Glu Gly Pro Gly Pro Gly Pro
145                   150                   155                   160
Asp Leu Pro Pro His Leu Leu Leu Ser Cys Leu Thr Gly Glu Gly Leu
            165                   170                   175
Asp Gly Leu Leu Glu Ala Leu Arg Lys Glu Leu Ala Ala Val Cys Gly
        180                   185                   190
Asp Pro Ser Thr Asp Pro Pro Leu Leu Thr Arg Ala Arg His Gln His
        195                   200                   205
His Leu Gln Gly Cys Leu Asp Ala Leu Gly His Tyr Lys Gln Ser Lys
    210                   215                   220
Asp Leu Ala Leu Ala Ala Glu Ala Leu Arg Val Ala Arg Gly His Leu
225                   230                   235                   240
Thr Arg Leu Thr Gly Gly Gly Thr Glu Glu Ile Leu Asp Ile Ile
            245                   250                   255
Phe Gln Asp Phe Cys Val Gly Lys
            260
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<210> 4277
<211> 1070
<212> DNA
<213> Homo sapiens

<400> 4277
cggccggtcg ggcctccttt tgttttagga agggcacttc actccccggg cccccacctg
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cccgcctgcg ccgccccttt ccgcgggtcc ggagttggcg gggccctgcg ccggaggagg
120
aggaccaggc ccgcgggctc agctctcgcc gccagcgggc cgcagcattt ttgaaacgtt
180
ggggttgttg gagtggttgg attttccctg gaattgagtg agaaattcag aagactgaag
240
cccaggctta ctgtctacct ttcacggagg cctagccgtg agaggacaga agaaggcacg
300
tggcgaatca tgacagcgga caaagacaaa gacaaagaca agagaagga ccgggaccga
360
gaccgggacc gagagagaga gaaaagagac aaagcaagag agagtgagaa ttcaaggcca
420
cgccggagct gtaccttgga aggaggagcc aaaaattatg ctgagagtga tcacagtgaa
480
gacgaggaca atgacaacaa tagtgccacc gcagaggagt ccacgaagaa gaataagaag
540
aaaccaccga aaaaaaagtc tcgttatgaa aggacagata ccggtgagat aacatcctac
600
atcactgaag atgatgtggt ctacagacca ggagactgtg tgtatatcga gagtcggagg
660
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ccaaacacac cgtatttcat ctgtagcatt caagacttca aactggtcca caactcccag
720
gcctgttgca gatctccaac tcctgctttg tgtgaccccc cagcatgctc tctgccggtg
780
gcatcacagc caccacagca tctttctgaa gccgggagag ggcctgtagg gagtaagagg
840
gaccatctcc tcatgaacgt caaatggtac taccgtcaat ctgaggttcc agattctgtg
900
tatcagcatt tggttcagga tcgacataat gaaaatgact ctggaagaga acttgtcatt
960
acagacccag ttatcaagaa ccgagagctc ttcatttctg attacgttga cacttaccat
1020
gctgctgccc ttagagggaa gtgtaacatt ctccattttt ctgacatatt
1070

<210> 4278
<211> 253
<212> PRT
<213> Homo sapiens

<400> 4278
Met Thr Ala Asp Lys Asp Lys Asp Lys Glu Lys Asp Arg Asp
 1   5   10   15
Arg Asp Arg Asp Arg Glu Arg Glu Lys Arg Asp Lys Ala Arg Glu Ser
            20   25   30
Glu Asn Ser Arg Pro Arg Arg Ser Cys Thr Leu Glu Gly Gly Ala Lys
            35   40   45
Asn Tyr Ala Glu Ser Asp His Ser Glu Asp Glu Asp Asn Asp Asn Asn
         50   55   60
Ser Ala Thr Ala Glu Glu Ser Thr Lys Lys Asn Lys Lys Lys Pro Pro
65   70   75   80
Lys Lys Lys Ser Arg Tyr Glu Arg Thr Asp Thr Gly Glu Ile Thr Ser
                85   90   95
Tyr Ile Thr Glu Asp Asp Val Val Tyr Arg Pro Gly Asp Cys Val Tyr
            100   105   110
Ile Glu Ser Arg Arg Pro Asn Thr Pro Tyr Phe Ile Cys Ser Ile Gln
            115   120   125
Asp Phe Lys Leu Val His Asn Ser Gln Ala Cys Cys Arg Ser Pro Thr
         130   135   140
Pro Ala Leu Cys Asp Pro Pro Ala Cys Ser Leu Pro Val Ala Ser Gln
145   150   155   160
Pro Pro Gln His Leu Ser Glu Ala Gly Arg Gly Pro Val Gly Ser Lys
                165   170   175
Arg Asp His Leu Leu Met Asn Val Lys Trp Tyr Tyr Arg Gln Ser Glu
            180   185   190
Val Pro Asp Ser Val Tyr Gln His Leu Val Gln Asp Arg His Asn Glu
            195   200   205
Asn Asp Ser Gly Arg Glu Leu Val Ile Thr Asp Pro Val Ile Lys Asn
         210   215   220
Arg Glu Leu Phe Ile Ser Asp Tyr Val Asp Thr Tyr His Ala Ala Ala
225   230   235   240
Leu Arg Gly Lys Cys Asn Ile Leu His Phe Ser Asp Ile
                245   250

3482

<210> 4279
<211> 1963
<212> DNA
<213> Homo sapiens

<400> 4279
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60
ctgagcgtac accagcagct gggcaagatg gtgggtgtgt ctgatgatgt caacgagtat
120
gcaatggccc tgagagacac cgaggacaag ctacgtcggt gccccaagag gaggaaggac
180
atccttgcag agttgaccaa gagccagaag gttttctcag aaaagctgga ccacctgagc
240
cgccgtcttg cctgggtcca tgccactgtc tactcccagg agaagatgct ggacatctac
300
tggctgctgc gcgtctgcct gcggaccatt gagcacggtg atcgcacagg gtctctcttt
360
gccttcatgc ccgagttcta cctgagcgtg gccatcaaca gctacagtgc tctcaagaat
420
tactttggtc ccgtgcacag catggaggag ctcccaggct atgaagagac cctgacccgc
480
ctggctgcca ttctcgccaa acactttgcc gacgcacgca ttgtgggcac tgacatccga
540
gactcactga tgcaggccct ggccagctac gtgtgctacc cacactccct gcgggctgtg
600ccgaggagca gcgtatcgcc atggtgagga acctcctggc gccctatgag   660
cagcggccct gggcccagac caactggatc ctggtgcggc tctgaggggg ctgtggcttc
720
gggtaccgct atacacggct gccacatctg ctgaaaacca aacttgagga cgccaatttg
780
cccagcctcc agaagccctg cccttccacc ctgctgcagc agcacatggc ggacctccta
840
cagcagggtc ctgatgtggc acccagcttc ctcaacagcg tcctcaatca gctcaactgg
900
gccttctctg aattcattgg catgatccaa gagatccagc aggctgctga gcgcctggag
960
cggaactttg tggacagccg gcagctcaag gtatgtgcca cctgctttga cctctcggtc
1020
agcctgctgc gtgtcttgga gatgactatc acactggtgc ctgagatatt ccttgactgg
1080
acccggccta cctctgagat gctgctgcgg cgtcttgcac agctgctaaa ccaggtgctg
1140
aaccgggtga cagctgagag gaacctgttt gatcgtgtgg tcaccctacg gctgcctggc
1200
ctagagagcg tggaccacta tcccattctg gtggcagtga cgggcatcct ggtgcagctc
1260
ctggtgcgtg gcccagcctc agagagagag caagccacat cagtgctcct ggcagatccc
1320
tgcttccagc tacgctcaat atgctatctc ctgggacagc cagagccccc agcacctggc
1380
actgctctgc cagcccctga ccggaagcgc ttctccctgc agagctatgc ggattatatc
1440
agtgccgatg agctggccca agtggaacag atgctggcgc acctgacctc tgcatctgcc
1500

caggcagcag ctgcctccct gcccaccagt gaggaggacc tctgccccat ctgctatgcc
1560
caccccatct ctgctgtgtt ccagccctgt ggccacaagt cctgcaaagc ctgtatcaac
1620
cagcacctga tgaacaacaa ggactgcttc ttctgcaaaa ccaccatcgt gtctgtagag
1680
gactgggaga agggagccaa tacgagtact acctcctcag ctgcctagcc ctcacagcct
1740
gtgccatcct ggaacctcca cctttgaacc cagagccagg ctgggcccta tttatgagct
1800
cccttttgccc ttctcctgta tcccacacca ccacatccaa cctccttgcc tgcctgtatc
1860
ctcattggtg ggagcccagc catggcccta attgtgcctg agcttgactt tcagtcaggg
1920
ccacagtgag cattaaatta ttattccata caaaaaaaaa aaa
1963

<210> 4280
<211> 575
<212> PRT
<213> Homo sapiens

<400> 4280
Arg Pro Leu Thr Glu Asn Ser Leu Leu Glu Val Leu Asp Gly Thr Val
 1   5   10   15
Met Met Tyr Ser Leu Ser Val His Gln Gln Leu Gly Lys Met Val Gly
            20   25   30
Val Ser Asp Asp Val Asn Glu Tyr Ala Met Ala Leu Arg Asp Thr Glu
            35   40   45
Asp Lys Leu Arg Arg Cys Pro Lys Arg Arg Lys Asp Ile Leu Ala Glu
        50   55   60
Leu Thr Lys Ser Gln Lys Val Phe Ser Glu Lys Leu Asp His Leu Ser
65   70   75   80
Arg Arg Leu Ala Trp Val His Ala Thr Val Tyr Ser Gln Glu Lys Met
                85   90   95
Leu Asp Ile Tyr Trp Leu Leu Arg Val Cys Leu Arg Thr Ile Glu His
            100   105   110
Gly Asp Arg Thr Gly Ser Leu Phe Ala Phe Met Pro Glu Phe Tyr Leu
        115   120   125
Ser Val Ala Ile Asn Ser Tyr Ser Ala Leu Lys Asn Tyr Phe Gly Pro
        130   135   140
Val His Ser Met Glu Glu Leu Pro Gly Tyr Glu Glu Thr Leu Thr Arg
145   150   155   160
Leu Ala Ala Ile Leu Ala Lys His Phe Ala Asp Ala Arg Ile Val Gly
                165   170   175
Thr Asp Ile Arg Asp Ser Leu Met Gln Ala Leu Ala Ser Tyr Val Cys
            180   185   190
Tyr Pro His Ser Leu Arg Ala Val Glu Arg Ile Pro Glu Glu Gln Arg
        195   200   205
Ile Ala Met Val Arg Asn Leu Leu Ala Pro Tyr Glu Gln Arg Pro Trp
        210   215   220
Ala Gln Thr Asn Trp Ile Leu Val Arg Leu Trp Arg Gly Cys Gly Phe
225   230   235   240
Gly Tyr Arg Tyr Thr Arg Leu Pro His Leu Leu Lys Thr Lys Leu Glu

```
                       245                  250                  255
Asp Ala Asn Leu Pro Ser Leu Gln Lys Pro Cys Pro Ser Thr Leu Leu
              260                  265                  270
Gln Gln His Met Ala Asp Leu Leu Gln Gln Gly Pro Asp Val Ala Pro
          275                  280                  285
Ser Phe Leu Asn Ser Val Leu Asn Gln Leu Asn Trp Ala Phe Ser Glu
      290                  295                  300
Phe Ile Gly Met Ile Gln Glu Ile Gln Gln Ala Ala Glu Arg Leu Glu
305                  310                  315                  320
Arg Asn Phe Val Asp Ser Arg Gln Leu Lys Val Cys Ala Thr Cys Phe
                  325                  330                  335
Asp Leu Ser Val Ser Leu Leu Arg Val Leu Glu Met Thr Ile Thr Leu
              340                  345                  350
Val Pro Glu Ile Phe Leu Asp Trp Thr Arg Pro Thr Ser Glu Met Leu
          355                  360                  365
Leu Arg Arg Leu Ala Gln Leu Leu Asn Gln Val Leu Asn Arg Val Thr
      370                  375                  380
Ala Glu Arg Asn Leu Phe Asp Arg Val Val Thr Leu Arg Leu Pro Gly
385                  390                  395                  400
Leu Glu Ser Val Asp His Tyr Pro Ile Leu Val Ala Val Thr Gly Ile
                  405                  410                  415
Leu Val Gln Leu Leu Val Arg Gly Pro Ala Ser Glu Arg Glu Gln Ala
              420                  425                  430
Thr Ser Val Leu Leu Ala Asp Pro Cys Phe Gln Leu Arg Ser Ile Cys
          435                  440                  445
Tyr Leu Leu Gly Gln Pro Glu Pro Pro Ala Pro Gly Thr Ala Leu Pro
      450                  455                  460
Ala Pro Asp Arg Lys Arg Phe Ser Leu Gln Ser Tyr Ala Asp Tyr Ile
465                  470                  475                  480
Ser Ala Asp Glu Leu Ala Gln Val Glu Gln Met Leu Ala His Leu Thr
                  485                  490                  495
Ser Ala Ser Ala Gln Ala Ala Ala Ser Leu Pro Thr Ser Glu Glu
              500                  505                  510
Asp Leu Cys Pro Ile Cys Tyr Ala His Pro Ile Ser Ala Val Phe Gln
          515                  520                  525
Pro Cys Gly His Lys Ser Cys Lys Ala Cys Ile Asn Gln His Leu Met
      530                  535                  540
Asn Asn Lys Asp Cys Phe Phe Cys Lys Thr Thr Ile Val Ser Val Glu
545                  550                  555                  560
Asp Trp Glu Lys Gly Ala Asn Thr Ser Thr Thr Ser Ser Ala Ala
              565                  570                  575
```

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<210> 4281
<211> 507
<212> DNA
<213> Homo sapiens

<400> 4281
acgcgtgaag ggacagagct ggggccttgt caggagcccc acagttggcc aatgggccag
60
atgccccata gtctcagccc acctctcttc tgccatgagt cccctgattc tgtcctttga
120
gctgactctg agaggcagtg ggcttcccgc cagcacctcc ccctatcaca tttgtagggc
180
```

tggtttatga ggccggaagt aagcaagcac cccctcatat caacctggca cttcacaccc
240
cccatggtta tcagtggggg tgctggctgg ctggcaggca gccagagaca tttcagcagg
300
tcaggcatgg atgcaggtgg aaatgagaga ggatcagtga gcgcattcat gtcttttgag
360
tggtctacag atgagtggtc tccagtctca aatgaggaga acaaataggg aagtaggagc
420
tcagggttct tgtgtgtctc ataggcagct gcctatccct gggtgataca gctccctggc
480
acacccattc ccaagggcac aggatcc
507

<210> 4282
<211> 106
<212> PRT
<213> Homo sapiens

<400> 4282
Met Asn Ala Leu Thr Asp Pro Leu Ser Phe Pro Pro Ala Ser Met Pro
 1   5   10   15
Asp Leu Leu Lys Cys Leu Trp Leu Pro Ala Ser Gln Pro Ala Pro Pro
                20   25   30
Leu Ile Thr Met Gly Gly Val Lys Cys Gln Val Asp Met Arg Gly Cys
            35   40   45
Leu Leu Thr Ser Gly Leu Ile Asn Gln Pro Tyr Lys Cys Asp Arg Gly
        50   55   60
Arg Cys Trp Arg Glu Ala His Cys Leu Ser Glu Ser Ala Gln Arg Thr
65   70   75   80
Glu Ser Gly Asp Ser Trp Gln Lys Arg Gly Gly Leu Arg Leu Trp Gly
                85   90   95
Ile Trp Pro Ile Gly Gln Leu Trp Gly Ser
            100   105

<210> 4283
<211> 315
<212> DNA
<213> Homo sapiens

<400> 4283
gaattctcaa ccagaacagc ccagcaggaa aggagccggc atggggtgcc cctctgcagc
60
cgaccgtttt cctagaaggc ctaaccgctc aaacgggcag gggagggggg cgggcggccc
120
gggagaaacc gagtccccgc cgggtcccca ccgtgtggcg ccgaccgaaa taactccagt
180
ccagctgcaa aaaccctccc gaaaacccaa gcttgtccgg cacaacttcg tctctccag
240
cctcattcct gcccgcactc cgccaaactg ctcgccctgc ccagcgcagc ggatgcagcg
300
ctcccggccc nacgg
315

<210> 4284

```
<211> 91
<212> PRT
<213> Homo sapiens

<400> 4284
Met Gly Cys Pro Ser Ala Ala Asp Arg Phe Pro Arg Arg Pro Asn Arg
1               5                   10                  15
Ser Asn Gly Gln Gly Arg Gly Ala Gly Gly Pro Gly Glu Thr Glu Ser
            20                  25                  30
Pro Pro Gly Pro His Arg Val Ala Pro Thr Glu Ile Thr Pro Val Gln
        35                  40                  45
Leu Gln Lys Pro Ser Arg Lys Pro Lys Leu Val Arg His Asn Phe Gly
    50                  55                  60
Leu Ser Ser Leu Ile Pro Ala Arg Thr Pro Pro Asn Cys Ser Pro Cys
65                  70                  75                  80
Pro Ala Gln Arg Met Gln Arg Ser Arg Pro Xaa
                85                  90
```

```
<210> 4285
<211> 591
<212> DNA
<213> Homo sapiens

<400> 4285
nagatctcag agaacttggt gaacattcag aaaatgcaga aaacgcaggt gaaatgccgc
60
aaaatcctga ccaagatgaa gcagcagggt catgagacag ccgcctgtcc ggagactgaa
120
gagataccgc agggagccag tggctgctgg aaggatgacc tccagaagga actgagtgat
180
atatggtgat gcccagcctg cagtctgacc cctgaccctc ctctgaaccc gttcccccaa
240
cgggatctgg cagtgaccac cagaacctgg agcccacctg agtccagact tccctcaccc
300
cctaggactc accccaccac ggcccccaac cttagctgta ctgctgtcta caccctgagc
360
agtgtggagt ctcccagcgc ccccagctcc ttgtcttctt gcaggtctgc tgtgcacgtg
420
ctgcaggact ccatagacag cctcactttg tgctcggggg cctgtcccaa ggcctcgagc
480
ctaagaggcc acaagggcac cagtgcctga gccctccact ccctcctgg gactctgact
540
ccgactgtga ccaggacctc tcccagccac ctttcagcaa gagcggccgc a
591
```

```
<210> 4286
<211> 106
<212> PRT
<213> Homo sapiens

<400> 4286
Cys Pro Ala Cys Ser Leu Thr Pro Asp Pro Pro Leu Asn Pro Phe Pro
1               5                   10                  15
Gln Arg Asp Leu Ala Val Thr Thr Arg Thr Trp Ser Pro Pro Glu Ser
```

```
                      20                    25                    30
Arg Leu Pro Ser Pro Pro Arg Thr His Pro Thr Thr Ala Pro Asn Leu
            35                    40                    45
Ser Cys Thr Ala Val Tyr Thr Leu Ser Ser Val Glu Ser Pro Ser Ala
        50                    55                    60
Pro Ser Ser Leu Ser Ser Cys Arg Ser Ala Val His Val Leu Gln Asp
65                    70                    75                    80
Ser Ile Asp Ser Leu Thr Leu Cys Ser Gly Ala Cys Pro Lys Ala Ser
                85                    90                    95
Ser Leu Arg Gly His Lys Gly Thr Ser Ala
            100                   105
```

<210> 4287
<211> 868
<212> DNA
<213> Homo sapiens

<400> 4287
cgagggcgcg actgcggggt tcctggtgct gaggacggac gccattggag ttccccgagaa
60
ggctgagctc tcatctccct gggacccgca gcatggctga gggaagcttc agcgtgcaat
120
cggaaagcta cagtgttgaa gacatggatg agggtagcga cgaagtcggg gaggaagaga
180
tggttgaagg caacgactat gaagaattcg gtgcgtttgg tggctatggc accctcacca
240
gctttgacat ccatatcctc agagccttcg gaagcttggg tccaggcctt cgcatcttat
300
cgaatgagcc ctgggaactg gaaaaccnct gtgctggccc agaccctggt ggaggcattg
360
cagctggatc cggaaacact tgccaatgag acggccgccc gtgctgccaa cgtagcccgc
420
gccgccgcct ccaaccgtgc ggctcgggcc gctgccgccg ctgcccgtac cgccttcagt
480
caggtggtcg ctagccaccg ggtggccacg ccgcaggtct caggagagga tacccagccc
540
acgacctacg ccgccgaggc tcaggggccc accccctgagc cacccctgc ttctccgcag
600
acctcccaga tgttagtcac cagtaagatg gctgcccccg aggctccggc aacctccgca
660
cagtcccaga caggctcccc ggcccaggag gctgctactg agggccctag tagcgcctgt
720
gcattctctc aggctccgtg tgccagggag gtggacgcca accggcccag cacagccttc
780
ctgggccaga atgatgtctt cgatttcact cagccggcag tgtcagtggc atggcttccc
840
gcgcccaaga gacctgccca gccaagag
868

<210> 4288
<211> 240
<212> PRT
<213> Homo sapiens

<400> 4288
Met Arg Val Ala Thr Lys Ser Gly Arg Lys Arg Trp Leu Lys Ala Thr
1   5   10   15
Thr Met Lys Asn Ser Val Arg Leu Val Ala Met Ala Pro Ser Pro Ala
            20   25   30
Leu Thr Ser Ile Ser Ser Glu Pro Ser Glu Ala Trp Val Gln Ala Phe
            35   40   45
Ala Ser Tyr Arg Met Ser Pro Gly Asn Trp Lys Thr Xaa Val Leu Ala
            50   55   60
Gln Thr Leu Val Glu Ala Leu Gln Leu Asp Pro Glu Thr Leu Ala Asn
65   70   75   80
Glu Thr Ala Ala Arg Ala Ala Asn Val Ala Arg Ala Ala Ala Ser Asn
                85   90   95
Arg Ala Ala Arg Ala Ala Ala Ala Ala Arg Thr Ala Phe Ser Gln
            100   105   110
Val Val Ala Ser His Arg Val Ala Thr Pro Gln Val Ser Gly Glu Asp
            115   120   125
Thr Gln Pro Thr Thr Tyr Ala Ala Glu Ala Gln Gly Pro Thr Pro Glu
            130   135   140
Pro Pro Leu Ala Ser Pro Gln Thr Ser Gln Met Leu Val Thr Ser Lys
145   150   155   160
Met Ala Ala Pro Glu Ala Pro Ala Thr Ser Ala Gln Ser Gln Thr Gly
                165   170   175
Ser Pro Ala Gln Glu Ala Ala Thr Glu Gly Pro Ser Ser Ala Cys Ala
            180   185   190
Phe Ser Gln Ala Pro Cys Ala Arg Glu Val Asp Ala Asn Arg Pro Ser
            195   200   205
Thr Ala Phe Leu Gly Gln Asn Asp Val Phe Asp Phe Thr Gln Pro Ala
210   215   220
Val Ser Val Ala Trp Leu Pro Ala Pro Lys Arg Pro Ala Gln Pro Arg
225   230   235   240

<210> 4289
<211> 353
<212> DNA
<213> Homo sapiens

<400> 4289
ggatccctgg gaagatgact accctgcctg tgcgggatat gagggagaaa tatgggagcc
60
tcctcacttc aggtgtcact gctcagcata tatccaggct ttgttttcat attggtcttg
120
caaagagcct tttgggaaca gtttttcttat tgaaacatac tcagtgttta aacctgcagg
180
tgtgggttgg tggcagtcca catggcatcc tttgctctgt ccctgttctc ctgtctctgg
240
ctattcaggt ccccgtgagg atactgtcac ccttgaataa tggagcttgc ggaagaccaa
300
gcccctgttt ttggagtcct tgtgctgagg ccgctgtaac ttgcggagag ttg
353

<210> 4290
<211> 113
<212> PRT

3489

<213> Homo sapiens

<400> 4290
Met Thr Thr Leu Pro Val Arg Asp Met Arg Glu Lys Tyr Gly Ser Leu
1   5   10   15
Leu Thr Ser Gly Val Thr Ala Gln His Ile Ser Arg Leu Cys Phe His
            20   25   30
Ile Gly Leu Ala Lys Ser Leu Leu Gly Thr Val Phe Leu Leu Lys His
        35   40   45
Thr Gln Cys Leu Asn Leu Gln Val Trp Val Gly Gly Ser Pro His Gly
    50   55   60
Ile Leu Cys Ser Val Pro Val Leu Leu Ser Leu Ala Ile Gln Val Pro
65   70   75   80
Val Arg Ile Leu Ser Pro Leu Asn Asn Gly Ala Cys Gly Arg Pro Ser
                85   90   95
Pro Cys Phe Trp Ser Pro Cys Ala Glu Ala Ala Val Thr Cys Gly Glu
                100   105   110
Leu

<210> 4291
<211> 517
<212> DNA
<213> Homo sapiens

<400> 4291
nnaaatttgc caagccaaga gttaccccag gaagattctc tcttacatgg ccaattttca
60
caagcagtca ctcccctagc ccatcatcac acagattatt caaagcccac cgatatctca
120
tggagagaca cactttctca gaagtttgga tcctcagatc acttggagaa actatttaag
180
atggatgaag caagtgccca gctccttgct tataaggaaa aaggccattc tcagagttca
240
caattttcct ctgatcaaga aatagctcat ctgctgcctg aaaatgtgag tgcgctccca
300
gctacggtgg cagttgcttc tccacatacc acctcggcta ctccaaagcc cgccaccctt
360
ctacccacca atgcttcagt gacaccttct gggacttccc agccacagct ggccaccaca
420
gctccacctg taaccactgt cacttctcag cctcccacga ccctcatttc tacagttttt
480
acacgggctg tggctacact ccaagcaatg gctacaa
517

<210> 4292
<211> 172
<212> PRT
<213> Homo sapiens

<400> 4292
Xaa Asn Leu Pro Ser Gln Glu Leu Pro Gln Glu Asp Ser Leu Leu His
1   5   10   15
Gly Gln Phe Ser Gln Ala Val Thr Pro Leu Ala His His His Thr Asp

```
                    20                    25                    30
Tyr Ser Lys Pro Thr Asp Ile Ser Trp Arg Asp Thr Leu Ser Gln Lys
            35                    40                    45
Phe Gly Ser Ser Asp His Leu Glu Lys Leu Phe Lys Met Asp Glu Ala
        50                    55                    60
Ser Ala Gln Leu Leu Ala Tyr Lys Glu Lys Gly His Ser Gln Ser Ser
65                    70                    75                    80
Gln Phe Ser Ser Asp Gln Glu Ile Ala His Leu Leu Pro Glu Asn Val
                85                    90                    95
Ser Ala Leu Pro Ala Thr Val Ala Val Ala Ser Pro His Thr Thr Ser
            100                   105                   110
Ala Thr Pro Lys Pro Ala Thr Leu Leu Pro Thr Asn Ala Ser Val Thr
        115                   120                   125
Pro Ser Gly Thr Ser Gln Pro Gln Leu Ala Thr Thr Ala Pro Pro Val
        130                   135                   140
Thr Thr Val Thr Ser Gln Pro Pro Thr Thr Leu Ile Ser Thr Val Phe
145                   150                   155                   160
Thr Arg Ala Val Ala Thr Leu Gln Ala Met Ala Thr
                165                   170
```

<210> 4293
<211> 547
<212> DNA
<213> Homo sapiens

<400> 4293
gccggcgccc ccggcgcgga tgcctgctct gtgcctgtat ctgagatcat cgccgttgag
60
gaaacagacg ttcacgggaa acatcaaggc agtggaaaat ggcagaaaat ggaaaagcct
120
tacgctttta cagttcactg tgtaaagaga gcacgacggc accgctggaa gtgggcgcag
180
gtgactttct ggtgtccaga ggagcagctg tgtcacttgt ggctgcagac cctgcgggag
240
atgctggaga agctgacgtc cagaccaaag catttactgg tatttatcaa cccgtttgga
300
ggaaaaggac aaggcaagcg gatatatgaa agaaaagtgg caccactgtt caccttagcc
360
tccatcacca ctgacatcat cgttactgaa catgctaatc aggccaagga gactctgtat
420
gagattaaca tagacaaata cgacggcatc gtctgtgtcg cggagatgg tatgttcagc
480
gaggtgctgc acggtctgat tgggaggacg cagaggagcg ccggggtcga ccagaaccac
540
ccccggg
547

<210> 4294
<211> 182
<212> PRT
<213> Homo sapiens

<400> 4294
Ala Gly Ala Pro Gly Ala Asp Ala Cys Ser Val Pro Val Ser Glu Ile

```
        1                  5                    10                   15
      Ile Ala Val Glu Glu Thr Asp Val His Gly Lys His Gln Gly Ser Gly
                    20                    25                   30
      Lys Trp Gln Lys Met Glu Lys Pro Tyr Ala Phe Thr Val His Cys Val
                    35                    40                   45
      Lys Arg Ala Arg Arg His Arg Trp Lys Trp Ala Gln Val Thr Phe Trp
                50                    55                    60
      Cys Pro Glu Glu Gln Leu Cys His Leu Trp Leu Gln Thr Leu Arg Glu
      65                    70                    75                   80
      Met Leu Glu Lys Leu Thr Ser Arg Pro Lys His Leu Leu Val Phe Ile
                    85                    90                   95
      Asn Pro Phe Gly Gly Lys Gly Gln Gly Lys Arg Ile Tyr Glu Arg Lys
                100                   105                   110
      Val Ala Pro Leu Phe Thr Leu Ala Ser Ile Thr Thr Asp Ile Ile Val
                115                   120                   125
      Thr Glu His Ala Asn Gln Ala Lys Glu Thr Leu Tyr Glu Ile Asn Ile
                130                   135                   140
      Asp Lys Tyr Asp Gly Ile Val Cys Val Gly Gly Asp Gly Met Phe Ser
      145                   150                   155                   160
      Glu Val Leu His Gly Leu Ile Gly Arg Thr Gln Arg Ser Ala Gly Val
                    165                   170                   175
      Asp Gln Asn His Pro Arg
                    180
```

<210> 4295
<211> 431
<212> DNA
<213> Homo sapiens

<400> 4295
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nntctagaaa atcactgtct ccttctaccc tgccatctct acaccagggt tacaaacaag
60
agcccactgc tggctccttg ttttgtaaat aagatttgtt ggactacagc tatgcccgta
120
catgtacatt ttgtgtatgg ctgcttttgt gccacaacag cagggttgag tattgcgaca
180
gagaccccca ttgcccacaa gcctaaaaca tttgccatcg agccctttaa gaaagagttt
240
gctggccgtg cgcggtggcc gtggctcccg cctgtaatcc cagcactttg gaaggctgag
300
gcaggcggtg aggtctggag ttcgaaacca gcctggccag cgtggcgaaa ccctgtctcc
360
ccctcccaga ttcacgtgat tatcccacct cagcctcctg agtacctggg actataggcg
420
cgtgccaacc a
431
```

<210> 4296
<211> 138
<212> PRT
<213> Homo sapiens

<400> 4296
Xaa Leu Glu Asn His Cys Leu Leu Leu Pro Cys His Leu Tyr Thr Arg

```
  1                   5                   10                  15
Val Thr Asn Lys Ser Pro Leu Leu Ala Pro Cys Phe Val Asn Lys Ile
            20                  25                  30
Cys Trp Thr Thr Ala Met Pro Val His Val His Phe Val Tyr Gly Cys
            35                  40                  45
Phe Cys Ala Thr Thr Ala Gly Leu Ser Ile Ala Thr Glu Thr Pro Ile
        50                  55                  60
Ala His Lys Pro Lys Thr Phe Ala Ile Glu Pro Phe Lys Lys Glu Phe
65                  70                  75                  80
Ala Gly Arg Ala Arg Trp Pro Trp Leu Pro Pro Val Ile Pro Ala Leu
                85                  90                  95
Trp Lys Ala Glu Ala Gly Gly Glu Val Trp Ser Ser Lys Pro Ala Trp
            100                 105                 110
Pro Ala Trp Arg Asn Pro Val Ser Pro Ser Gln Ile His Val Ile Ile
        115                 120                 125
Pro Pro Gln Pro Pro Glu Tyr Leu Gly Leu
    130                 135
```

<210> 4297
<211> 1668
<212> DNA
<213> Homo sapiens

<400> 4297
nccatggact cggcctttgt gggtataaag gtcaaccaag tgtcagctgc agttggaaaa
60
gatttcaccg tgattccatc taaactgatt cagtttgacc caggaatgtc aactaagatg
120
tggaatatag caattaccta tgacggatta gaggaagatg atgaggtctt tgaagtaatt
180
ctgaactccc ctgtgaatgc agttcttggc acaaagacaa aagctgcagt gaaaattttg
240
gactcaaaag gaggacaatg ccatccttca tattcctcca accaaagcaa gcacagcaca
300
tgggagaagg gcatttggca tctgctgccc ccagggtctt cctcatccac cacttctggt
360
tcctttcatc tggaagaag acctcttcca tcttccatgc agctagcagt catcagggga
420
gacaccctgc ggggctttga ttctacagat ctttctcaaa ggaagcttag gacccgtggg
480
aatggcaaaa cagttcgtcc atcctctgtt tatagaaatg gaacagacat catctataat
540
tatcatggga tagtttcctt gaaactggag gatgacagtt tcccaactca caaaaggaag
600
gccaaagtat ccatcattag tcagccacaa aagacaatca agtggcaga actgcctcaa
660
gcagataagg tggaatccac aactgactca cacttcccca gacaggacca gttgccctca
720
tttccaaga actgcactct ggaattaaag ggactcttcc attttgaaga aggcatccag
780
aagctgtatc agtgcaatgg gatcgcctgg aaagcctgga gtccccaaac caaggatgtg
840
gaagacaaat cctgtccagc cgggtggcac cagcactcag gctactgtca catcttgatc
900

                              3493

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acagagcaga aaggcacctg gaatgcggct gcccaagctt gcagggaaca atacctgggc
960
aaccttgtaa ctgtattctc caggcagcac atgcggtggc tctgggacat tggtgggaga
1020
aagtcctttt ggataggttt gaacgaccaa gtgcatgctg ccactgggga gtggatcggt
1080
ggtgaacctg ttgccttcac caatgggaga agagggcct ctccacgctc caagcttgga
1140
aagagctgtg ttttggttca aagacaaggg aaatggcaaa caaaagactg taggagagcc
1200
aaacctcata attatgtgtg ttccagaaaa ctctaaatat aacagaccct acagggggcc
1260
acctggagtt tgtcacctat ttattcacag gatctgtgaa tattgctcca tagaaaacaa
1320
attgttatga ttgagtgggt atacctttgt gattctgtct agtgaaaatg ggacattttt
1380
aatagtgcca gaaagattga taaataaata ttttttacaa gataagatac aatttttgta
1440
tctcaatacc ttttaaaata aatgccagca gtattaaaaa gtgtaaggtt tgtttattcc
1500
agaagaccct caccccttacc ccattccaaa tctcagggag caccagtctc atagtccttg
1560
gatttttttt aaaaaaaatt tttggtcccg ttacctctaa tgaatttatt ctgaaatatg
1620
tatcgtaggt gctcctacca ctttagtctg agtggaaagc caaaaaac
1668


<210> 4298
<211> 411
<212> PRT
<213> Homo sapiens


<400> 4298
Xaa Met Asp Ser Ala Phe Val Gly Ile Lys Val Asn Gln Val Ser Ala
 1               5                  10                  15
Ala Val Gly Lys Asp Phe Thr Val Ile Pro Ser Lys Leu Ile Gln Phe
            20                  25                  30
Asp Pro Gly Met Ser Thr Lys Met Trp Asn Ile Ala Ile Thr Tyr Asp
        35                  40                  45
Gly Leu Glu Glu Asp Asp Glu Val Phe Glu Val Ile Leu Asn Ser Pro
    50                  55                  60
Val Asn Ala Val Leu Gly Thr Lys Thr Lys Ala Ala Val Lys Ile Leu
65                  70                  75                  80
Asp Ser Lys Gly Gly Gln Cys His Pro Ser Tyr Ser Ser Asn Gln Ser
                85                  90                  95
Lys His Ser Thr Trp Glu Lys Gly Ile Trp His Leu Leu Pro Pro Gly
            100                 105                 110
Ser Ser Ser Ser Thr Thr Ser Gly Ser Phe His Leu Glu Arg Arg Pro
        115                 120                 125
Leu Pro Ser Ser Met Gln Leu Ala Val Ile Arg Gly Asp Thr Leu Arg
    130                 135                 140
Gly Phe Asp Ser Thr Asp Leu Ser Gln Arg Lys Leu Arg Thr Arg Gly
145                 150                 155                 160
Asn Gly Lys Thr Val Arg Pro Ser Ser Val Tyr Arg Asn Gly Thr Asp
```

```
                165                      170                      175
Ile Ile Tyr Asn Tyr His Gly Ile Val Ser Leu Lys Leu Glu Asp Asp
            180                      185                      190
Ser Phe Pro Thr His Lys Arg Lys Ala Lys Val Ser Ile Ile Ser Gln
        195                      200                      205
Pro Gln Lys Thr Ile Lys Val Ala Glu Leu Pro Gln Ala Asp Lys Val
    210                      215                      220
Glu Ser Thr Thr Asp Ser His Phe Pro Arg Gln Asp Gln Leu Pro Ser
225                      230                      235                      240
Phe Pro Lys Asn Cys Thr Leu Glu Leu Lys Gly Leu Phe His Phe Glu
                245                      250                      255
Glu Gly Ile Gln Lys Leu Tyr Gln Cys Asn Gly Ile Ala Trp Lys Ala
            260                      265                      270
Trp Ser Pro Gln Thr Lys Asp Val Glu Asp Lys Ser Cys Pro Ala Gly
        275                      280                      285
Trp His Gln His Ser Gly Tyr Cys His Ile Leu Ile Thr Glu Gln Lys
    290                      295                      300
Gly Thr Trp Asn Ala Ala Ala Gln Ala Cys Arg Glu Gln Tyr Leu Gly
305                      310                      315                      320
Asn Leu Val Thr Val Phe Ser Arg Gln His Met Arg Trp Leu Trp Asp
                325                      330                      335
Ile Gly Gly Arg Lys Ser Phe Trp Ile Gly Leu Asn Asp Gln Val His
            340                      345                      350
Ala Gly His Trp Glu Trp Ile Gly Gly Glu Pro Val Ala Phe Thr Asn
        355                      360                      365
Gly Arg Arg Gly Pro Ser Pro Arg Ser Lys Leu Gly Lys Ser Cys Val
    370                      375                      380
Leu Val Gln Arg Gln Gly Lys Trp Gln Thr Lys Asp Cys Arg Arg Ala
385                      390                      395                      400
Lys Pro His Asn Tyr Val Cys Ser Arg Lys Leu
                405                      410
```

```
<210> 4299
<211> 988
<212> DNA
<213> Homo sapiens
```

```
<400> 4299
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120
ccttgggaca ggcccccgag cacaaagtga ggctgtctat ggagttctgc agcacgtgca
180
cagcagacca tatatcactc agttccttct ggaggtcatc cttccagcag ccactggctc
240
cctgcggtat ctcttcagtc tccggacagg cggctgtctc atgaccctgc tgcttcatct
300
tggtcaggat tttgcggcat ttcacctgcg ttttctgcat tttctgaatg ttcaccaagt
360
tctctgagat ctcatcctcc tgcgcttgga gcttctgata gatgaaggtc acctcctccc
420
gcaccagttc cagctcctcc cacaggaact tcttgctgtc ccggatctcc tgggccagca
480
```

```
gctgcaggca gcgagtggtg cgggcccgct gcatctcctc actgtcacgc agggtcttct
540
ccagcccctg aaggccttgg gtcagggccc catacagctc ctgccggccc tgctccatgc
600
cccacttgtg ctcctccttc tctccatggc ggcctgtggg gctcagcacc tcttcaagct
660
gctgaatctt gatttgctgc aagcagctct ccttctccaa catggtcact gagtggttca
720
ggaactcgaa agccttggtc tgggcctgta actggctctt gagtgactca gttcacatc
780
gcaggagctt ctgggagtcg ggaatcatca caatggtctt ggctttgact ttggaagagc
840
tggtctccaa gggcttcaca taccacctgt tcatgctctn cccatcaggg accacgaagc
900
cagtcctcag ctgtgacgct gaagtttgat cccgcgggga caccatcgta ttaaaacgct
960
cagagactga gtcacagaga ggggtgtc
988
```

```
<210> 4300
<211> 84
<212> PRT
<213> Homo sapiens
```

```
<400> 4300
Gly Cys Leu Trp Ser Ser Ala Ala Arg Ala Gln Gln Thr Ile Tyr His
  1               5                  10                  15
Ser Val Pro Ser Gly Gly His Pro Ser Ser Ser His Trp Leu Pro Ala
             20                  25                  30
Val Ser Leu Gln Ser Pro Asp Arg Arg Leu Ser His Asp Pro Ala Ala
         35                  40                  45
Ser Ser Trp Ser Gly Phe Cys Gly Ile Ser Pro Ala Phe Ser Ala Phe
     50                  55                  60
Ser Glu Cys Ser Pro Ser Ser Leu Arg Ser His Pro Pro Ala Leu Gly
65                  70                  75                  80
Ala Ser Asp Arg
```

```
<210> 4301
<211> 2429
<212> DNA
<213> Homo sapiens
```

```
<400> 4301
nnaggcaccg cggcgctcgg gtgttttgg gggcccgggt ggagggcccg ggtgccgggg
60
cccaaggtgc ggcctcgcta gcgggagagg gagcgggatc accggcccgg agagagctct
120
cagggccaga gcggggcagg aggatgcttt cccagcccca ccatggagct gcgctgtggg
180
ggattgctgt tcagttctcg ctttgattca gggaatctag cccacgtgga gaaggtggaa
240
tctttgtcca gtgatgggga aggggtagga ggtggggcgt cagccctgac cagtggcatt
300
```

```
gcctcttccc ctgactatga attcaacgtg tggacccgac cagactgtgc tgaaacggaa
360
tttgagaatg ggaacaggtc atggttctac ttcagcgtcc ggggaggaat gccaggaaaa
420
ctcatcaaga tcaacattat gaacatgaac aagcagagca agctgtattc ccagggcatg
480
gcccccTttg tgcgcacact gcccacccgg ccacgctggg aacgcattcg agaccggccc
540
acctttgaga tgacagagac gcagtttgtg ttatcctttg ttcatcgttt cgtggagggc
600
cgtggggcca ccacttctt cgccttctgc taccccttct cctacagtga ctgccaggaa
660
ctgctaaacc agctagacca gcgctttccg gagaaccacc ctacccatag cagcccctg
720
gataccatct attaccatcg ggagctcctt tgctattctc tggatggact tcgtgtagat
780
ctgctgacga tcacttcctg ccatgggctt cgagaagatc gagagccccg tctagagcag
840
ctatttcctg ataccagcac ccctcgacca ttccgtttcg caggcaagag gatattcttc
900
ttaagcagta gagtacaccc aggggagact ccatctagct ttgtcttcaa tggctttctg
960
gacttcatcc tccgacctga tgatccccgg gcccaaaccc tccgtcgcct cttcgtcttt
1020
aagctgattc ccatgttgaa ccccgatggt gtggtccggg gacactaccg cacagactca
1080
cgtggagtga atctgaaccg tcagtacctg aagcctgatg ccgtcctgca cccggccatc
1140
tatggggcca aagctgtgct tctctaccac catgtgcact ctcgtctgaa ctcccagagt
1200
tcctctgagc accagcccag ttcctgtctc cctcctgatg ctcctgtttc tgacctggag
1260
aaagccaaca atctccaaaa tgaagctcag tgtgggcact cagctgacag gcataacgct
1320
gaagcctgga aacaaacaga gccagcagaa cagaagctca acagtgtgtg gattatgcca
1380
caacagtctg cggggcttga agagtcagcc cctgatacca tcccccccaa agagagtggc
1440
gttgcttact atgtggacct gcatggacat gcttccaaaa ggggctgctt catgtacgga
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1560
ttgaattcag cccacttcga cttccagggc tgcaatttct cagagaagaa tatgtatgcc
1620
cgagaccgta gagatggcca gtctaaagag ggaagcggcc gtgttgcaat ctacaaagcc
1680
tcagggataa tccacagcta cacacttgaa tgcaactaca cactggacg ctcagtaaac
1740
agcatccctg ctgcctgcca tgacaatggg cgtgccagcc ccctccccc gccggctttc
1800
ccctccagat acactgtgga actatttgag caggtgggac gagctatggc cattgcagcc
1860
ctggacatgg cggaatgtaa tccgtggccc cgaattgtac tgtcagagca cagcagcctt
1920
```

actaatctac gggcctggat gctgaaacat gtacgcaaca gccgaggcct aagcagcact
1980
ctgaatgtgg gtgtcaacaa gaagaggggc cttcgaactc cacccaaaag tcacaatggg
2040
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2100
agtgccggtg gtagcagcag cagccaacaa aattctccac agatgaagaa ttccccccagc
2160
tttccttttc atggcagtcg gcctgcaggg ctgccaggcc tgggctctag tacccaaaag
2220
gtcacccacc gggtgctggg ccccgtcaga ggtaagccag tctgggagcc cctgcaacat
2280
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2340
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2400
aaaaaaaaaa aaaaaaaaaa aaaaaaaaa
2429

<210> 4302
<211> 717
<212> PRT
<213> Homo sapiens

<400> 4302
Met Glu Leu Arg Cys Gly Gly Leu Leu Phe Ser Ser Arg Phe Asp Ser
 1   5   10   15
Gly Asn Leu Ala His Val Glu Lys Val Glu Ser Leu Ser Ser Asp Gly
            20   25   30
Glu Gly Val Gly Gly Gly Ala Ser Ala Leu Thr Ser Gly Ile Ala Ser
            35   40   45
Ser Pro Asp Tyr Glu Phe Asn Val Trp Thr Arg Pro Asp Cys Ala Glu
        50   55   60
Thr Glu Phe Glu Asn Gly Asn Arg Ser Trp Phe Tyr Phe Ser Val Arg
65   70   75   80
Gly Gly Met Pro Gly Lys Leu Ile Lys Ile Asn Ile Met Asn Met Asn
                85   90   95
Lys Gln Ser Lys Leu Tyr Ser Gln Gly Met Ala Pro Phe Val Arg Thr
            100   105   110
Leu Pro Thr Arg Pro Arg Trp Glu Arg Ile Arg Asp Arg Pro Thr Phe
            115   120   125
Glu Met Thr Glu Thr Gln Phe Val Leu Ser Phe Val His Arg Phe Val
        130   135   140
Glu Gly Arg Gly Ala Thr Thr Phe Phe Ala Phe Cys Tyr Pro Phe Ser
145   150   155   160
Tyr Ser Asp Cys Gln Glu Leu Leu Asn Gln Leu Asp Gln Arg Phe Pro
                165   170   175
Glu Asn His Pro Thr His Ser Ser Pro Leu Asp Thr Ile Tyr Tyr His
                180   185   190
Arg Glu Leu Leu Cys Tyr Ser Leu Asp Gly Leu Arg Val Asp Leu Leu
            195   200   205
Thr Ile Thr Ser Cys His Gly Leu Arg Glu Asp Arg Glu Pro Arg Leu
        210   215   220
Glu Gln Leu Phe Pro Asp Thr Ser Thr Pro Arg Pro Phe Arg Phe Ala

3498

```
          225                     230                     235                     240
Gly Lys Arg Ile Phe Phe Leu Ser Ser Arg Val His Pro Gly Glu Thr
                245                     250                     255
Pro Ser Ser Phe Val Phe Asn Gly Phe Leu Asp Phe Ile Leu Arg Pro
                260                     265                     270
Asp Asp Pro Arg Ala Gln Thr Leu Arg Arg Leu Phe Val Phe Lys Leu
                275                     280                     285
Ile Pro Met Leu Asn Pro Asp Gly Val Val Arg Gly His Tyr Arg Thr
                290                     295                     300
Asp Ser Arg Gly Val Asn Leu Asn Arg Gln Tyr Leu Lys Pro Asp Ala
305                     310                     315                     320
Val Leu His Pro Ala Ile Tyr Gly Ala Lys Ala Val Leu Leu Tyr His
                325                     330                     335
His Val His Ser Arg Leu Asn Ser Gln Ser Ser Ser Glu His Gln Pro
                340                     345                     350
Ser Ser Cys Leu Pro Pro Asp Ala Pro Val Ser Asp Leu Glu Lys Ala
                355                     360                     365
Asn Asn Leu Gln Asn Glu Ala Gln Cys Gly His Ser Ala Asp Arg His
                370                     375                     380
Asn Ala Glu Ala Trp Lys Gln Thr Glu Pro Ala Glu Gln Lys Leu Asn
385                     390                     395                     400
Ser Val Trp Ile Met Pro Gln Gln Ser Ala Gly Leu Glu Glu Ser Ala
                405                     410                     415
Pro Asp Thr Ile Pro Pro Lys Glu Ser Gly Val Ala Tyr Tyr Val Asp
                420                     425                     430
Leu His Gly His Ala Ser Lys Arg Gly Cys Phe Met Tyr Gly Asn Ser
                435                     440                     445
Phe Ser Asp Glu Ser Thr Gln Val Glu Asn Met Leu Tyr Pro Lys Leu
                450                     455                     460
Ile Ser Leu Asn Ser Ala His Phe Asp Phe Gln Gly Cys Asn Phe Ser
465                     470                     475                     480
Glu Lys Asn Met Tyr Ala Arg Asp Arg Arg Asp Gly Gln Ser Lys Glu
                485                     490                     495
Gly Ser Gly Arg Val Ala Ile Tyr Lys Ala Ser Gly Ile Ile His Ser
                500                     505                     510
Tyr Thr Leu Glu Cys Asn Tyr Asn Thr Gly Arg Ser Val Asn Ser Ile
                515                     520                     525
Pro Ala Ala Cys His Asp Asn Gly Arg Ala Ser Pro Pro Pro Pro Pro
                530                     535                     540
Ala Phe Pro Ser Arg Tyr Thr Val Glu Leu Phe Glu Gln Val Gly Arg
545                     550                     555                     560
Ala Met Ala Ile Ala Ala Leu Asp Met Ala Glu Cys Asn Pro Trp Pro
                565                     570                     575
Arg Ile Val Leu Ser Glu His Ser Ser Leu Thr Asn Leu Arg Ala Trp
                580                     585                     590
Met Leu Lys His Val Arg Asn Ser Arg Gly Leu Ser Ser Thr Leu Asn
                595                     600                     605
Val Gly Val Asn Lys Lys Arg Gly Leu Arg Thr Pro Pro Lys Ser His
610                     615                     620
Asn Gly Leu Pro Val Ser Cys Ser Glu Asn Thr Leu Ser Arg Ala Arg
625                     630                     635                     640
Ser Phe Ser Thr Gly Thr Ser Ala Gly Gly Ser Ser Ser Ser Gln Gln
                645                     650                     655
Asn Ser Pro Gln Met Lys Asn Ser Pro Ser Phe Pro Phe His Gly Ser
```

```
                    660                  665                  670
Arg Pro Ala Gly Leu Pro Gly Leu Gly Ser Ser Thr Gln Lys Val Thr
            675                  680                  685
His Arg Val Leu Gly Pro Val Arg Gly Lys Pro Val Trp Glu Pro Leu
        690                  695                  700
Gln His Val Phe Gly Cys Leu Gly His Cys Trp Gly Lys
705                  710                  715
```

```
<210> 4303
<211> 768
<212> DNA
<213> Homo sapiens

<400> 4303
acgcgtgcag caagagagct ggacaatctg cagtatcgaa agatgaagaa actccttttc
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caggaggcac ataatggacc agcagtagaa gcacaggaag aagaagagga acaagatcat
120
ggtgttggcc ggacaggaac agttaatagt gttggaagta atcaatccat tcccagcatg
180
tccatcagtg ccagcagcca aagcagtagt gttaacagtc ttccagatgt ctcagatgac
240
aagagtgagc tagacatgat ggagggagac cacacagtga tgtctaacag ttctgttatc
300
catttaaaac cagaggaaga aaattacaga gaagagggag atcctagaac aagagcatca
360
gatccacaat ctccacccca agtatctcgt cacaaatcac actatcgtaa tcgagaacac
420
tttgctacta tacggacagc atcactggtt acgaggcaaa tgcaagaaca tgagcaggac
480
tctgagctta gagaacaaat gtctggctat aagcgaatga ggcgacaaca tcaaaagcaa
540
ctgatgactc tggaaaacaa gctaaaggct gagatggatg aacatcgcct cagattagac
600
aaagatcttg aaactcagcg taacaatttt gctgcagaaa tggagaaact tatcaagaaa
660
caccaggctg ctatggagaa agaggctaaa gtgatgtcca atgaagagaa aaaatttcag
720
caacatattc aggcccaaca gaagaaagaa ctgaatagtt ttctcgag
768
```

```
<210> 4304
<211> 256
<212> PRT
<213> Homo sapiens

<400> 4304
Thr Arg Ala Ala Arg Glu Leu Asp Asn Leu Gln Tyr Arg Lys Met Lys
1               5                   10                  15
Lys Leu Leu Phe Gln Glu Ala His Asn Gly Pro Ala Val Glu Ala Gln
            20                  25                  30
Glu Glu Glu Glu Glu Gln Asp His Gly Val Gly Arg Thr Gly Thr Val
        35                  40                  45
Asn Ser Val Gly Ser Asn Gln Ser Ile Pro Ser Met Ser Ile Ser Ala
```

```
         50                    55                    60
Ser Ser Gln Ser Ser Ser Val Asn Ser Leu Pro Asp Val Ser Asp Asp
65                    70                    75                    80
Lys Ser Glu Leu Asp Met Met Glu Gly Asp His Thr Val Met Ser Asn
                 85                    90                    95
Ser Ser Val Ile His Leu Lys Pro Glu Glu Asn Tyr Arg Glu Glu
                100                   105                   110
Gly Asp Pro Arg Thr Arg Ala Ser Asp Pro Gln Ser Pro Pro Gln Val
                115                   120                   125
Ser Arg His Lys Ser His Tyr Arg Asn Arg Glu His Phe Ala Thr Ile
        130                   135                   140
Arg Thr Ala Ser Leu Val Thr Arg Gln Met Gln Glu His Glu Gln Asp
145                   150                   155                   160
Ser Glu Leu Arg Glu Gln Met Ser Gly Tyr Lys Arg Met Arg Arg Gln
                165                   170                   175
His Gln Lys Gln Leu Met Thr Leu Glu Asn Lys Leu Lys Ala Glu Met
                180                   185                   190
Asp Glu His Arg Leu Arg Leu Asp Lys Asp Leu Glu Thr Gln Arg Asn
        195                   200                   205
Asn Phe Ala Ala Glu Met Glu Lys Leu Ile Lys Lys His Gln Ala Ala
        210                   215                   220
Met Glu Lys Glu Ala Lys Val Met Ser Asn Glu Glu Lys Lys Phe Gln
225                   230                   235                   240
Gln His Ile Gln Ala Gln Gln Lys Lys Glu Leu Asn Ser Phe Leu Glu
                245                   250                   255
```

<210> 4305
<211> 3400
<212> DNA
<213> Homo sapiens

<400> 4305
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cgtgccagga agctgcggag caacctgcgc cagctcacgc tcaccgccgc cggggcctgc
120
cccggggccg gggccgacgc gctcgagtcc cccgcctccc cccagctcgt gctgccggcc
180
aacctcgggg acattgaggc actgaacctg gggaacaacg gcctggagga ggtacccgag
240
gggctggggt cggcgctggg cagcctgcgc gtcctggtcc tgcgcaggaa ccgcttcgcc
300
cggctgcccc ggcggtggc cgagctcggc caccacctca ccgagctgga cgtgagccac
360
aaccggctga ccgccctggg cgcggaggtg gtgagtgctc tgagggagct gcggaagctc
420
aacctcagcc acaaccagct gcccgccctg cccgcccagc tgggcgctct cgctcacctg
480
gaggagctgg atgtcagctt taaccggctg gcgcacctgc ctgactccct ctcctgcctc
540
tcccgcctgc gcaccctgga cgtggatcac aaccagctca ctgccttccc ccggcagctg
600
ctgcagctgg tggccctgga ggagctggac gtgtccagca accggctgcg gggcctgcct
660
```

gaggatatca gtgccctgcg tgccctcaag atcctctggc tgagtggggc cgagcttggc
720
acgctgcccg ccggcttctg cgagctggcc agtttggaga gcctcatgct agacaacaac
780
gggctgcagg ctctgcccgc ccagttcagc tgcctgcagc ggctcaaaat gctcaacctg
840
tcctccaacc tcttcgagga gttccctgcc gcgctgctgc ccctggctgg tctggaggag
900
ctctacctta gtcgcaacca gctcacctcg gtgccatccc ttatctcggg cctgggccgg
960
cttctcacct tgtggctgga taataaccgc atccgctacc tgccggactc catcgtggag
1020
ctgaccggcc tggaggagct cgtgctgcag gggaaccaga tcgcggtgct gcccgaccac
1080
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1140
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1200
cattcccagc cggcggtgca gccccggctc aagctgctcc tgatggggca taaggctgca
1260
ggaaagactt tgctgcgcca ctgcctcacc gaggagagag tggagggatg cccaggagga
1320
ggggacaagg agaagtgcta cccaccgtca cctcccctg tgagcaaggg catcgaggtg
1380
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gatgaaagtt atgaggtgat ccagcccttc ttcctgtccc caggggccct atacgtgctg
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1620
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1680
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1800
aagaaccttc gacggcgcaa ggcccatttt caatacctgc tcaaccaccg gctgcagatc
1860
ctctccccg tgttgcctgt tagctgcagg gacccgcgcc acttacgacg ccttcgggac
1920
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1980
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2040
ctaagctggt gggactcggc gcgcttgggc ctgcaggcgg tctgaccga ggaccgactg
2100
cagagtgccc tctcctacct gcatgagagc ggcaagctac tctactttga ggacagtccg
2160
gctctcaagg agcacgtctt ccacaacctc acccgcctca tcgacatcct caatgtcttc
2220
ttccagaggg atccctcttt gctgctgcat aagctgctcc tagggaccag tggagagggc
2280

```
aaggcggagg gggaaagctc cccgcccatg gcgcggtcca cccccagcca ggaactgctc
2340
cgggccaccc agctccatca gtatgtggag ggctttctgt tgcatgggct cttgccagct
2400
catgtcattc ggttgctgct taagcctcat gtccaggccc agcaggactt gcagctgttg
2460
ctggagctgc tggagaagat gggactctgt tactgcctca ataaacccaa gggcaagcct
2520
ttgaatgggt ccacagcttg gtacaagttc ccatgctatg tgcagaacga ggtgccccat
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2640
cagattgaat atagctttcc ttttactttt ccacctgggt tgtttgcacg ctacagtgtc
2700
cagatcaaca gccatgtggt gcacaggtcg gatggtaaat ttcagatctt tgcctataga
2760
gggaaagttc ctgtggttgt gagttacaga cctgccaggg gagtcctgca gccagacacc
2820
ctgtccattg ctagccatgc atcattacca aatatatgga ccgcatggca agccataacc
2880
cccttggtgg aggaactgaa tgtcctactt caggaatggc ctggactgca ctacaccgtg
2940
cacattctct gttctaagtg ccttaagaga ggatcgccca atccacatgc ttttccaggg
3000
gagttgctga gtcagcccag accggaagga gtggcagaga tcatttgccc caagaacggc
3060
agcgagcgag taaatgttgc cttggtttac ccacccacgc cgactgtgat cagcccctgt
3120
tccaagaaga atgttggtga aaagcacaga aaccagtgac gtttgtggct gtggaatttc
3180
catggagaaa agagagcatc tgaacacctg gaccatcttt tgcacctggc agaccctctg
3240
cactcacccc agcgtgttct gtgaacttga gtgacaacgc gtgcttgcag ggtgcttttt
3300
ggatgactgg ggaagaggtg gggagagggg tggtgggggg aagcatggac gagaacatgg
3360
agcaaatgtt ttacaacctg aacctcagaa ctgtgatctc
3400


<210> 4306
<211> 1052
<212> PRT
<213> Homo sapiens


<400> 4306
Met Ala Gly Met Asp Ser Gly Asn Leu Lys Thr Ala Arg Leu Trp Arg
 1               5                   10                  15
Asp Ala Ala Leu Arg Ala Arg Lys Leu Arg Ser Asn Leu Arg Gln Leu
            20                  25                  30
Thr Leu Thr Ala Ala Gly Ala Cys Pro Gly Ala Gly Ala Asp Ala Leu
        35                  40                  45
Glu Ser Pro Ala Ser Pro Gln Leu Val Leu Pro Ala Asn Leu Gly Asp
    50                  55                  60
Ile Glu Ala Leu Asn Leu Gly Asn Asn Gly Leu Glu Glu Val Pro Glu
```

```
65                    70                    75                    80
Gly Leu Gly Ser Ala Leu Gly Ser Leu Arg Val Leu Val Leu Arg Arg
                85                    90                    95
Asn Arg Phe Ala Arg Leu Pro Pro Ala Val Ala Glu Leu Gly His His
            100                   105                   110
Leu Thr Glu Leu Asp Val Ser His Asn Arg Leu Thr Ala Leu Gly Ala
            115                   120                   125
Glu Val Val Ser Ala Leu Arg Glu Leu Arg Lys Leu Asn Leu Ser His
        130                   135                   140
Asn Gln Leu Pro Ala Leu Pro Ala Gln Leu Gly Ala Leu Ala His Leu
145                   150                   155                   160
Glu Glu Leu Asp Val Ser Phe Asn Arg Leu Ala His Leu Pro Asp Ser
                165                   170                   175
Leu Ser Cys Leu Ser Arg Leu Arg Thr Leu Asp Val Asp His Asn Gln
                180                   185                   190
Leu Thr Ala Phe Pro Arg Gln Leu Leu Gln Leu Val Ala Leu Glu Glu
                195                   200                   205
Leu Asp Val Ser Ser Asn Arg Leu Arg Gly Leu Pro Glu Asp Ile Ser
        210                   215                   220
Ala Leu Arg Ala Leu Lys Ile Leu Trp Leu Ser Gly Ala Glu Leu Gly
225                   230                   235                   240
Thr Leu Pro Ala Gly Phe Cys Glu Leu Ala Ser Leu Glu Ser Leu Met
                245                   250                   255
Leu Asp Asn Asn Gly Leu Gln Ala Leu Pro Ala Gln Phe Ser Cys Leu
                260                   265                   270
Gln Arg Leu Lys Met Leu Asn Leu Ser Ser Asn Leu Phe Glu Glu Phe
                275                   280                   285
Pro Ala Ala Leu Leu Pro Leu Ala Gly Leu Glu Glu Leu Tyr Leu Ser
        290                   295                   300
Arg Asn Gln Leu Thr Ser Val Pro Ser Leu Ile Ser Gly Leu Gly Arg
305                   310                   315                   320
Leu Leu Thr Leu Trp Leu Asp Asn Asn Arg Ile Arg Tyr Leu Pro Asp
                325                   330                   335
Ser Ile Val Glu Leu Thr Gly Leu Glu Glu Leu Val Leu Gln Gly Asn
                340                   345                   350
Gln Ile Ala Val Leu Pro Asp His Phe Gly Gln Leu Ser Arg Val Gly
            355                   360                   365
Leu Trp Lys Ile Lys Asp Asn Pro Leu Ile Gln Pro Pro Tyr Glu Val
        370                   375                   380
Cys Met Lys Gly Ile Pro Tyr Ile Ala Ala Tyr Gln Lys Glu Leu Ala
385                   390                   395                   400
His Ser Gln Pro Ala Val Gln Pro Arg Leu Lys Leu Leu Leu Met Gly
            405                   410                   415
His Lys Ala Ala Gly Lys Thr Leu Leu Arg His Cys Leu Thr Glu Glu
            420                   425                   430
Arg Val Glu Gly Cys Pro Gly Gly Gly Asp Lys Glu Lys Cys Tyr Pro
            435                   440                   445
Pro Ser Pro Pro Pro Val Ser Lys Gly Ile Glu Val Thr Ser Trp Thr
        450                   455                   460
Ala Asp Ala Ser Arg Gly Leu Arg Phe Ile Val Tyr Asp Leu Ala Gly
465                   470                   475                   480
Asp Glu Ser Tyr Glu Val Ile Gln Pro Phe Phe Leu Ser Pro Gly Ala
                485                   490                   495
Leu Tyr Val Leu Val Val Asn Leu Ala Thr Tyr Glu Pro Arg His Phe
```

```
                  500                      505                      510
Pro Thr Thr Val Gly Ser Phe Leu His Arg Val Gly Ala Arg Val Pro
            515                      520                      525
Asn Ala Val Val Cys Ile Val Gly Thr His Ala Asp Leu Cys Gly Glu
        530                      535                      540
Arg Glu Leu Glu Glu Lys Cys Leu Asp Ile His Arg Gln Ile Ala Leu
545                      550                      555                      560
Gln Glu Lys His Asp Ala Glu Gly Leu Ser Arg Leu Ala Lys Val Val
                  565                      570                      575
Asp Glu Ala Leu Ala Arg Asp Phe Glu Leu Arg Ser Ala Ser Pro His
            580                      585                      590
Ala Ala Tyr Tyr Gly Val Ser Asp Lys Asn Leu Arg Arg Arg Lys Ala
            595                      600                      605
His Phe Gln Tyr Leu Leu Asn His Arg Leu Gln Ile Leu Ser Pro Val
        610                      615                      620
Leu Pro Val Ser Cys Arg Asp Pro Arg His Leu Arg Arg Leu Arg Asp
625                      630                      635                      640
Lys Leu Leu Ser Val Ala Glu His Arg Glu Ile Phe Pro Asn Leu His
                  645                      650                      655
Arg Val Leu Pro Arg Ser Trp Gln Val Leu Glu Glu Leu His Phe Gln
            660                      665                      670
Pro Pro Gln Ala Gln Arg Leu Trp Leu Ser Trp Trp Asp Ser Ala Arg
            675                      680                      685
Leu Gly Leu Gln Ala Gly Leu Thr Glu Asp Arg Leu Gln Ser Ala Leu
        690                      695                      700
Ser Tyr Leu His Glu Ser Gly Lys Leu Leu Tyr Phe Glu Asp Ser Pro
705                      710                      715                      720
Ala Leu Lys Glu His Val Phe His Asn Leu Thr Arg Leu Ile Asp Ile
                  725                      730                      735
Leu Asn Val Phe Phe Gln Arg Asp Pro Ser Leu Leu Leu His Lys Leu
            740                      745                      750
Leu Leu Gly Thr Ser Gly Glu Gly Lys Ala Glu Gly Glu Ser Ser Pro
            755                      760                      765
Pro Met Ala Arg Ser Thr Pro Ser Gln Glu Leu Leu Arg Ala Thr Gln
        770                      775                      780
Leu His Gln Tyr Val Glu Gly Phe Leu Leu His Gly Leu Leu Pro Ala
785                      790                      795                      800
His Val Ile Arg Leu Leu Leu Lys Pro His Val Gln Ala Gln Gln Asp
                  805                      810                      815
Leu Gln Leu Leu Leu Glu Leu Leu Glu Lys Met Gly Leu Cys Tyr Cys
            820                      825                      830
Leu Asn Lys Pro Lys Gly Lys Pro Leu Asn Gly Ser Thr Ala Trp Tyr
            835                      840                      845
Lys Phe Pro Cys Tyr Val Gln Asn Glu Val Pro His Ala Glu Ala Trp
        850                      855                      860
Ile Asn Gly Thr Asn Leu Ala Gly Gln Ser Phe Val Ala Glu Gln Leu
865                      870                      875                      880
Gln Ile Glu Tyr Ser Phe Pro Phe Thr Phe Pro Pro Gly Leu Phe Ala
                  885                      890                      895
Arg Tyr Ser Val Gln Ile Asn Ser His Val Val His Arg Ser Asp Gly
            900                      905                      910
Lys Phe Gln Ile Phe Ala Tyr Arg Gly Lys Val Pro Val Val Val Ser
            915                      920                      925
Tyr Arg Pro Ala Arg Gly Val Leu Gln Pro Asp Thr Leu Ser Ile Ala
```

```
        930                    935                    940
Ser His Ala Ser Leu Pro Asn Ile Trp Thr Ala Trp Gln Ala Ile Thr
945                    950                    955                    960
Pro Leu Val Glu Glu Leu Asn Val Leu Leu Gln Glu Trp Pro Gly Leu
                965                    970                    975
His Tyr Thr Val His Ile Leu Cys Ser Lys Cys Leu Lys Arg Gly Ser
                980                    985                    990
Pro Asn Pro His Ala Phe Pro Gly Glu Leu Leu Ser Gln Pro Arg Pro
        995                   1000                   1005
Glu Gly Val Ala Glu Ile Ile Cys Pro Lys Asn Gly Ser Glu Arg Val
       1010                   1015                   1020
Asn Val Ala Leu Val Tyr Pro Pro Thr Pro Thr Val Ile Ser Pro Cys
1025                   1030                   1035                   1040
Ser Lys Lys Asn Val Gly Glu Lys His Arg Asn Gln
                1045                   1050
```

```
<210> 4307
<211> 947
<212> DNA
<213> Homo sapiens
```

```
<400> 4307
tgtacagcct gcagaggacc agccctgaaa agaatgagag agtccgccag atgcgccccg
60
tgtgtgactg ccaggctcac ctgctctgga accggcctcg gtttggagag atcaatgacc
120
aggacagaac tgatcgatac gtccaggctc tgaggaccgt ctctctcctc ctgggcgagc
180
cgttcttcac taccagcctg ctgccgtggc acaacctcta cttctggtac gtgcggacgc
240
tgtggaccag cacctggggc caggtgccat ggtgatgccc caggcagcct cgctgcacgc
300
tgtggttgtg gagttcaggg tgtgcaggga acagcaagat gtgcctcttg ttcttgctgc
360
cacgcttccc tgtgtcctgc gggcgggtgt ggatggggct gctccttcct cacaggancc
420
tgtggcggat ccggagccnc ctgtggtgac tgcgaaggct tcgacgtgca catcatggat
480
gacatgatta aggtaggcag ggccacactc tgcatagtcc ccccgacctg ctcctgtatc
540
gcaggcctct cacagggtcc cagcttgggc agcacaggct cttctgttgg gggcagtgag
600
gtcaggtgct gccattttgt gtggttcaac atgagcattg cttggtacca gccctgttct
660
tggctccgtg ctgtcaccct gtgtcagaat ctccactggg cctgcacgtc ctgtcattgc
720
aactgcccct gccagtgccc acagcttctt ttctagtggg gctgactttc cagaggccat
780
ctgggaacct tcttaggcag ccatttccat ggtggggggct ccattcccgg gaggggtacc
840
tgaggagatt cccacaggtt atttacatgg tagggggttag caactgggcc tacgttctcc
900
agaaccatgg gctgtcctga cagcgccagt ggtccttgga ttcatga
947
```

```
<210> 4308
<211> 200
<212> PRT
<213> Homo sapiens

<400> 4308
Gly Pro Ser Leu Ser Ser Trp Ala Ser Arg Ser Ser Leu Pro Ala Cys
 1               5                  10                  15
Cys Arg Gly Thr Thr Ser Thr Ser Gly Thr Cys Gly Arg Cys Gly Pro
            20                  25                  30
Ala Pro Gly Ala Arg Cys His Gly Asp Ala Pro Gly Ser Leu Ala Ala
            35                  40                  45
Arg Cys Gly Cys Gly Val Gln Gly Val Gln Gly Thr Ala Arg Cys Ala
        50                  55                  60
Ser Cys Ser Cys Cys His Ala Ser Leu Cys Pro Ala Gly Gly Cys Gly
65                  70                  75                  80
Trp Gly Cys Ser Phe Leu Thr Gly Xaa Cys Gly Gly Ser Gly Ala Xaa
                85                  90                  95
Cys Gly Asp Cys Glu Gly Phe Asp Val His Ile Met Asp Asp Met Ile
            100                 105                 110
Lys Val Gly Arg Ala Thr Leu Cys Ile Val Pro Pro Thr Cys Ser Cys
            115                 120                 125
Ile Ala Gly Leu Ser Gln Gly Pro Ser Leu Gly Ser Thr Gly Ser Ser
        130                 135                 140
Val Gly Gly Ser Glu Val Arg Cys Cys His Phe Val Trp Phe Asn Met
145                 150                 155                 160
Ser Ile Ala Trp Tyr Gln Pro Cys Ser Trp Leu Arg Ala Val Thr Leu
                165                 170                 175
Cys Gln Asn Leu His Trp Ala Cys Thr Ser Cys His Cys Asn Cys Pro
            180                 185                 190
Cys Gln Cys Pro Gln Leu Leu Phe
            195                 200

<210> 4309
<211> 1928
<212> DNA
<213> Homo sapiens

<400> 4309
ttttttttttg agttactggc catttgaggt atttattaat gaagattaaa catccaaagg
60
gcagtcctca atgctcattt ccatgatttt aagagttgat aactccatgt catgattatt
120
gtcgcctttg acactggaga actgaacaga ttgggagggt gatgtgttaa gaccacataa
180
tccatttgaa atctcaacct tttcagggtc actatcacct tcaatgacat tcacagaagt
240
ttcccgatct gttaaactgt ctgaaatact tggatgattt tcatccaaag ttgaagtttc
300
aagatttgtt tcatcattca cctgttgaat tataacccct tctgaatgct ttgatttata
360
aataggcatg aaaaattcag ttggtgaagg gaatatctcg ttctcatcct ttggtgccga
420
```

```
caataacata tccaaagcct tttggtattg ttgacgttcc tgctgaattg ttacttcact
480
ttcatttttt aattcatttg gttctgaatt cccagccttt tcaaaatcaa atacattcaa
540
catatcaaca tcattttgct ttaccgagtt ttcctccgat gtgcagccta agtctacttt
600
caggacatgc agcaggtggc gcattttttc ctcctccaaa tgtttatttt gttttatatg
660
tcgctcgaac agtcgttcta aaaacctgtt tgaaaataaa ccaagtttca aaatttcatc
720
tgttacatct tcaatgaaac tcagatacaa cagttcttct tcatcagagt agattttacg
780
agttgaaggg ggcttcaggg aatactgaca cattgccctt ggtgaggaat gctgaagagc
840
atcatcctta atctcatccc atgttgagtc atgcccttct aaaggtaaag gagctatttt
900
ttctttggca tcatatgtca cacaattaga tgcctgcttt atgttcattt ctgaatctgt
960
catgttttta gtctcagctg tccccaactc agatttaaag cttaattcag tctgggtttc
1020
agcttctatc cgttgatctg taaaatcctt ttttctttg gcaggtgtat aatagcgata
1080
ctgtgacagg aaagattttg cttctgtttt taaagtgcga ggagtgaatg gcaattgttt
1140
gttagaaaag agttcagaat gtttatccaa aagatcccca ctgggtgctt tcgaaatgac
1200
taactgaaac cggtgggaat ttgggaatgt gcttctgggc cttctgccat acagggctcc
1260
agagctcagt ttccggggcc cggaggctgc ataatccaca ctggacgggg aggaactgga
1320
gttcttctca ggaccatttg tgatgacttt actggattta tgtagactta ggtgtagtct
1380
ctctgaagag ggtactagtg accttgcaaa ggatgaaaat ccattcattt cttcttttaa
1440
catgtcatcc tcaatttgcg gttcgcctga gggctttgt aaggtattaa aaagtgactt
1500
ggaattattt ttataattgg ctcgcattgc agtttagtt aatttgaact cttttcaca
1560
ttgtgctaat tccttttga gtttctctct tcgttgttgg tctgcatact ttatgctggt
1620
actcacgctt actggaaccg agcagtctac tgcagctttg gctgaaagga ttttattata
1680
gtgaacagcc atgtgattct tgaccagctg gagagtgctt agtctgagag aagaggagtc
1740
agtgcaaaaa gcattacttt tggtgctcaa gtgtccttta aataggcacg gtggaccata
1800
tctgggaagg acagaggttg ctctgactct ccggctgcca ttcatgctta gtcctcttgc
1860
agccgccgca gggacacgct gtatcccctt cggtccttcc cgcgccgccc accccggcag
1920
tggaggac
1928
```

```
<210> 4310
```

<211> 599
<212> PRT
<213> Homo sapiens

<400> 4310
Met Asn Gly Ser Arg Arg Val Arg Ala Thr Ser Val Leu Pro Arg Tyr
1   5   10   15
Gly Pro Pro Cys Leu Phe Lys Gly His Leu Ser Thr Lys Ser Asn Ala
            20   25   30
Phe Cys Thr Asp Ser Ser Ser Leu Arg Leu Ser Thr Leu Gln Leu Val
        35   40   45
Lys Asn His Met Ala Val His Tyr Asn Lys Ile Leu Ser Ala Lys Ala
    50   55   60
Ala Val Asp Cys Ser Val Pro Val Ser Val Ser Thr Ser Ile Lys Tyr
65   70   75   80
Ala Asp Gln Gln Arg Arg Glu Lys Leu Lys Lys Glu Leu Ala Gln Cys
                85   90   95
Glu Lys Glu Phe Lys Leu Thr Lys Thr Ala Met Arg Ala Asn Tyr Lys
            100   105   110
Asn Asn Ser Lys Ser Leu Phe Asn Thr Leu Gln Lys Pro Ser Gly Glu
        115   120   125
Pro Gln Ile Glu Asp Asp Met Leu Lys Glu Glu Met Asn Gly Phe Ser
    130   135   140
Ser Phe Ala Arg Ser Leu Val Pro Ser Ser Glu Arg Leu His Leu Ser
145   150   155   160
Leu His Lys Ser Ser Lys Val Ile Thr Asn Gly Pro Glu Lys Asn Ser
                165   170   175
Ser Ser Ser Pro Ser Ser Val Asp Tyr Ala Ala Ser Gly Pro Arg Lys
            180   185   190
Leu Ser Ser Gly Ala Leu Tyr Gly Arg Arg Pro Arg Ser Thr Phe Pro
            195   200   205
Asn Ser His Arg Phe Gln Leu Val Ile Ser Lys Ala Pro Ser Gly Asp
    210   215   220
Leu Leu Asp Lys His Ser Glu Leu Phe Ser Asn Lys Gln Leu Pro Phe
225   230   235   240
Thr Pro Arg Thr Leu Lys Thr Glu Ala Lys Ser Phe Leu Ser Gln Tyr
                245   250   255
Arg Tyr Tyr Thr Pro Ala Lys Arg Lys Lys Asp Phe Thr Asp Gln Arg
                260   265   270
Ile Glu Ala Glu Thr Gln Thr Glu Leu Ser Phe Lys Ser Glu Leu Gly
            275   280   285
Thr Ala Glu Thr Lys Asn Met Thr Asp Ser Glu Met Asn Ile Lys Gln
    290   295   300
Ala Ser Asn Cys Val Thr Tyr Asp Ala Lys Glu Lys Ile Ala Pro Leu
305   310   315   320
Pro Leu Glu Gly His Asp Ser Thr Trp Asp Glu Ile Lys Asp Asp Ala
            325   330   335
Leu Gln His Ser Ser Pro Arg Ala Met Cys Gln Tyr Ser Leu Lys Pro
            340   345   350
Pro Ser Thr Arg Lys Ile Tyr Ser Asp Glu Glu Leu Leu Tyr Leu
    355   360   365
Ser Phe Ile Glu Asp Val Thr Asp Glu Ile Leu Lys Leu Gly Leu Phe
370   375   380
Ser Asn Arg Phe Leu Glu Arg Leu Phe Glu Arg His Ile Lys Gln Asn

```
385                  390                  395                  400
Lys His Leu Glu Glu Glu Lys Met Arg His Leu Leu His Val Leu Lys
                405                  410                  415
Val Asp Leu Gly Cys Thr Ser Glu Glu Asn Ser Val Lys Gln Asn Asp
                420                  425                  430
Val Asp Met Leu Asn Val Phe Asp Phe Glu Lys Ala Gly Asn Ser Glu
                435                  440                  445
Pro Asn Glu Leu Lys Asn Glu Ser Glu Val Thr Ile Gln Gln Glu Arg
        450                  455                  460
Gln Gln Tyr Gln Lys Ala Leu Asp Met Leu Leu Ser Ala Pro Lys Asp
465                  470                  475                  480
Glu Asn Glu Ile Phe Pro Ser Pro Thr Glu Phe Phe Met Pro Ile Tyr
                485                  490                  495
Lys Ser Lys His Ser Glu Gly Val Ile Ile Gln Gln Val Asn Asp Glu
                500                  505                  510
Thr Asn Leu Glu Thr Ser Thr Leu Asp Glu Asn His Pro Ser Ile Ser
                515                  520                  525
Asp Ser Leu Thr Asp Arg Glu Thr Ser Val Asn Val Ile Glu Gly Asp
        530                  535                  540
Ser Asp Pro Glu Lys Val Glu Ile Ser Asn Gly Leu Cys Gly Leu Asn
545                  550                  555                  560
Thr Ser Pro Ser Gln Ser Val Gln Phe Ser Ser Val Lys Gly Asp Asn
                565                  570                  575
Asn His Asp Met Glu Leu Ser Thr Leu Lys Ile Met Glu Met Ser Ile
                580                  585                  590
Glu Asp Cys Pro Leu Asp Val
                595
```

```
<210> 4311
<211> 432
<212> DNA
<213> Homo sapiens

<400> 4311
nnacgcgtga aggggcattcg cccttggaat tgtcagcgat gttttgcaca ttatgatgtc
60
cagagcattt tgtttaatat caacgaagcc atggctacga gggctaatgt ggggaaaagg
120
aaaaacataa ccactggggc atctgcagca tcccagactc agatgcctac gggccagaca
180
ggcaactgtg agtccccttt agggagcaag gaggacctca actccaaaga gaacctggat
240
gccgatgagg gagatgggaa aagtaacgac ctcgtcctta gttgtcctta ctttagaaat
300
gagactggag gggaaggcga caggcggatt gcgctctctc gagccaactc atcctctttc
360
agttctgggg aaagctgctc tttcgaatcg tcactcagct ctcactgcac aaatgcaggt
420
gtctccgtct tg
432
```

```
<210> 4312
<211> 144
<212> PRT
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```
<213> Homo sapiens

<400> 4312
Xaa Arg Val Lys Gly Ile Arg Pro Trp Asn Cys Gln Arg Cys Phe Ala
 1               5                  10                  15
His Tyr Asp Val Gln Ser Ile Leu Phe Asn Ile Asn Glu Ala Met Ala
            20                  25                  30
Thr Arg Ala Asn Val Gly Lys Arg Lys Asn Ile Thr Thr Gly Ala Ser
        35                  40                  45
Ala Ala Ser Gln Thr Gln Met Pro Thr Gly Gln Thr Gly Asn Cys Glu
    50                  55                  60
Ser Pro Leu Gly Ser Lys Glu Asp Leu Asn Ser Lys Glu Asn Leu Asp
65                  70                  75                  80
Ala Asp Glu Gly Asp Gly Lys Ser Asn Asp Leu Val Leu Ser Cys Pro
                85                  90                  95
Tyr Phe Arg Asn Glu Thr Gly Gly Glu Gly Asp Arg Arg Ile Ala Leu
            100                 105                 110
Ser Arg Ala Asn Ser Ser Ser Phe Ser Ser Gly Glu Ser Cys Ser Phe
        115                 120                 125
Glu Ser Ser Leu Ser Ser His Cys Thr Asn Ala Gly Val Ser Val Leu
    130                 135                 140


<210> 4313
<211> 936
<212> DNA
<213> Homo sapiens

<400> 4313
ggatccctcc tttttcctcc cctgccctgc ccaggcccag atggccttga ctgtaaagcc
60
aggtgctgcc tgacaggttc ttctctccct gtctctggtc attgatccat ctctttgtcc
120
attcagtatc caaccatcct ctccattctc ctctggacct caccactctc agagctgctt
180
gtcctggcag aatctacagt tcaccccaac tctatgcctt acccctccca acccaacagc
240
atttgcagtt tgcaaaatat acagacccaa gtcctgaggg gactgaggac atgatgctgg
300
gcccaagtct cctgctcagg gcttctctcc aatgccagcc ctgccactcc ttcctcaccc
360
tccttggagc ctcctctgct gcttgtctat cccaacggcc ctgctcccct cccttcctgc
420
ccttcaccag ctttctggga caccatgccc tgaggaaggg acctttggtt ttctctaaac
480
atctttgaag ggctgaggca gtcagggctg ctgccttgt cactctttat ttggaagcca
540
ctcaaaccat cccaagaag agggacctca gctggcaatc tggaaacctg gcccaggtct
600
gggcagatgt cttcacttct cctaccttcc cagtcttgtg atcctgtgat gagcaccagg
660
atggccctgt ggtccctaga gcaccCctca tgctgtaggg tcctgcagcc ccatcctttc
720
tctactgggc cctggtatcc tggctcctct ctcagctctg ccactgatct ctgtgcctta
780
```

gtttacttct ctgcacgggg gactcacccc aagaccattt ccagcagctt cccaggtgat
840
gtggtgcccc aaggctgggc tttgcagctg tggcccagct ccttagtgct gcccaggaga
900
caccaggctg ctcagaatga ggtgactgcg ggcaac
936

<210> 4314
<211> 110
<212> PRT
<213> Homo sapiens

<400> 4314
Met Ser Ser Leu Leu Leu Pro Ser Gln Ser Cys Asp Pro Val Met Ser
1   5   10   15
Thr Arg Met Ala Leu Trp Ser Leu Glu His Pro Ser Cys Cys Arg Val
            20   25   30
Leu Gln Pro His Pro Phe Ser Thr Gly Pro Trp Tyr Pro Gly Ser Ser
        35   40   45
Leu Ser Ser Ala Thr Asp Leu Cys Ala Leu Val Tyr Phe Ser Ala Arg
    50   55   60
Gly Thr His Pro Lys Thr Ile Ser Ser Ser Phe Pro Gly Asp Val Val
65   70   75   80
Pro Gln Gly Trp Ala Leu Gln Leu Trp Pro Ser Ser Leu Val Leu Pro
                85   90   95
Arg Arg His Gln Ala Ala Gln Asn Glu Val Thr Ala Gly Asn
            100   105   110

<210> 4315
<211> 573
<212> DNA
<213> Homo sapiens

<400> 4315
nncctaatcc aatatgactg gtgtccttat aagaagagga aattaggaca cagacaggca
60
cagagcgatg accatgtgaa gacacaggga agagatggcc acctaccacc acgccatggt
120
cacctaccat ccaagccatg gtcaccttca ccaagccaca gtcatctacc atccaagcca
180
ccgtcaccta ccatccaagc catggccacc tacctgccaa gccatggcca cctacccgcc
240
aagccatggt cacctaccca ccaagtcatg gtcgcctacc atccaaggag caggcctgga
300
acagatcctt ccccagagcc ctcagtagga gccaaccctg ctgcaccctt gatctcagac
360
ttcaagcctc cagaactgtg ggacaatcct tcactgtcat ttaatccacc cagcatgtgg
420
tctcttgtca cagttgcatt agccagtgaa cctacccggg cccttctgca gtcgcctggc
480
tcaggagtgg ttctggtcag gaagttctga ggccaggcag gatcgggaca ctccctggaa
540
agacccgagg gagatatttg ggaaacaaga tgg
573

3512

<210> 4316
<211> 169
<212> PRT
<213> Homo sapiens

<400> 4316
Xaa Leu Ile Gln Tyr Asp Trp Cys Pro Tyr Lys Lys Arg Lys Leu Gly
1   5   10   15
His Arg Gln Ala Gln Ser Asp Asp His Val Lys Thr Gln Gly Arg Asp
            20   25   30
Gly His Leu Pro Pro Arg His Gly His Leu Pro Ser Lys Pro Trp Ser
        35   40   45
Pro Ser Pro Ser His Ser His Leu Pro Ser Lys Pro Pro Ser Pro Thr
    50   55   60
Ile Gln Ala Met Ala Thr Tyr Leu Pro Ser His Gly His Leu Pro Ala
65   70   75   80
Lys Pro Trp Ser Pro Thr His Gln Val Met Val Ala Tyr His Pro Arg
                85   90   95
Ser Arg Pro Gly Thr Asp Pro Ser Pro Glu Pro Ser Val Gly Ala Asn
            100   105   110
Pro Ala Asp Thr Leu Ile Ser Asp Phe Lys Pro Pro Glu Leu Trp Asp
            115   120   125
Asn Pro Ser Leu Ser Phe Asn Pro Pro Ser Met Trp Ser Leu Val Thr
    130   135   140
Val Ala Leu Ala Ser Glu Pro Thr Arg Ala Leu Leu Gln Ser Pro Gly
145   150   155   160
Ser Gly Val Val Leu Val Arg Lys Phe
                165

<210> 4317
<211> 744
<212> DNA
<213> Homo sapiens

<400> 4317
nntgaagaga agtcaaaaaa ctcatgacct gtcagagatt tggggtccat ttcaggatca
60
tcccatgccg aaaacatact ccagatattt aatgaatttc gtgatagccg cttattcaca
120
gatgttatca tttgggtgga aggaaaagaa tttccttgcc atagagctgt gctctcagcc
180
tgtagcagct acttcagagc tatgttttgt aatgaccaca gggaaagccg agaaatgttg
240
gttgagatca atggtatttt agctgaagct atggaatgtt ttttgcagta tgtttatact
300
ggaaaggtga agatcactac agagaatgta cagtatctct ttgagacatc aagcctcttt
360
cagattagtg ttctccgtga tgcatgtgcc aagttcttgg aggagcaact tgatccttgt
420
aattgcttag gaatccagcg ctttgctgat acccattcac tcaaaacact cttcacaaaa
480
tgcaaaaatt ttgcgttaca gacttttgag gatgtatccc agcacgaaga atttcttgag
540

```
cttgacaaag atgaacttat tgattatatt tgtagtgatg aacttgttat tggtaaagag
600
gagatggttt ttgaagccgt catgcgttgg gtctatcgtg ccgttgatct gagaagacca
660
ctgttacacg agctcctgac acatgtgaga ctccctctgt tgcatcccaa ctactttgtt
720
caaacagttg aagtggacca attg
744
```

```
<210> 4318
<211> 239
<212> PRT
<213> Homo sapiens
```

```
<400> 4318
Pro Val Arg Asp Leu Gly Ser Ile Ser Gly Ser Ser His Ala Glu Asn
 1               5                  10                  15
Ile Leu Gln Ile Phe Asn Glu Phe Arg Asp Ser Arg Leu Phe Thr Asp
                20                  25                  30
Val Ile Ile Trp Val Glu Gly Lys Glu Phe Pro Cys His Arg Ala Val
                35                  40                  45
Leu Ser Ala Cys Ser Ser Tyr Phe Arg Ala Met Phe Cys Asn Asp His
    50                  55                  60
Arg Glu Ser Arg Glu Met Leu Val Glu Ile Asn Gly Ile Leu Ala Glu
65                  70                  75                  80
Ala Met Glu Cys Phe Leu Gln Tyr Val Tyr Thr Gly Lys Val Lys Ile
                85                  90                  95
Thr Thr Glu Asn Val Gln Tyr Leu Phe Glu Thr Ser Ser Leu Phe Gln
                100                 105                 110
Ile Ser Val Leu Arg Asp Ala Cys Ala Lys Phe Leu Glu Glu Gln Leu
    115                 120                 125
Asp Pro Cys Asn Cys Leu Gly Ile Gln Arg Phe Ala Asp Thr His Ser
    130                 135                 140
Leu Lys Thr Leu Phe Thr Lys Cys Lys Asn Phe Ala Leu Gln Thr Phe
145                 150                 155                 160
Glu Asp Val Ser Gln His Glu Glu Phe Leu Glu Leu Asp Lys Asp Glu
                165                 170                 175
Leu Ile Asp Tyr Ile Cys Ser Asp Glu Leu Val Ile Gly Lys Glu Glu
                180                 185                 190
Met Val Phe Glu Ala Val Met Arg Trp Val Tyr Arg Ala Val Asp Leu
                195                 200                 205
Arg Arg Pro Leu Leu His Glu Leu Leu Thr His Val Arg Leu Pro Leu
    210                 215                 220
Leu His Pro Asn Tyr Phe Val Gln Thr Val Glu Val Asp Gln Leu
225                 230                 235
```

```
<210> 4319
<211> 388
<212> DNA
<213> Homo sapiens
```

```
<400> 4319
nccatggaga aaagtattga tgctgtgatt gcaactgcct ctgcaccacc ttcttccagt
60
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3514

```
ccaggccgta gccacagcaa ggaccgaacc ctgggaaaac cagacagcct tttagtgcct
120
gcagtcgcaa gtgactcttg caataatagc atctcactcc tatctgaaaa gttgacaagc
180
agctgttccc cccatcatat caagagaagt gtagtggaag ctatgcaacg ccaagctcgg
240
aaaatgtgca attacgacaa aatcttggcc acaaagaaaa acctagacca tgtcaataaa
300
atcttaaaag ccaaaaaact tcaaaggcag gccaggacag ggaataactt tgtgaaacgt
360
aggccaggtc gaccgcggtc ggagagag
388


<210> 4320
<211> 129
<212> PRT
<213> Homo sapiens

<400> 4320
Xaa Met Glu Lys Ser Ile Asp Ala Val Ile Ala Thr Ala Ser Ala Pro
 1               5                  10                  15
Pro Ser Ser Ser Pro Gly Arg Ser His Ser Lys Asp Arg Thr Leu Gly
            20                  25                  30
Lys Pro Asp Ser Leu Leu Val Pro Ala Val Ala Ser Asp Ser Cys Asn
            35                  40                  45
Asn Ser Ile Ser Leu Leu Ser Glu Lys Leu Thr Ser Ser Cys Ser Pro
        50                  55                  60
His His Ile Lys Arg Ser Val Val Glu Ala Met Gln Arg Gln Ala Arg
65                  70                  75                  80
Lys Met Cys Asn Tyr Asp Lys Ile Leu Ala Thr Lys Lys Asn Leu Asp
                85                  90                  95
His Val Asn Lys Ile Leu Lys Ala Lys Lys Leu Gln Arg Gln Ala Arg
            100                 105                 110
Thr Gly Asn Asn Phe Val Lys Arg Arg Pro Gly Arg Pro Arg Ser Glu
            115                 120                 125
Arg


<210> 4321
<211> 278
<212> DNA
<213> Homo sapiens

<400> 4321
ngcccagaac ctgccacagt cccctgagaa caccgacctg caggttattc caggcagcca
60
gaccaggctc cttggtgaga agaccaccac agcggcaggg tccagccaca gcaggcccgg
120
cgtcccggtg gaaggcagcc ctgggcggaa cccaggcgtt taacggctca ctaggcagcc
180
ccagatctgg ggaacagatg agcacgtggg gagctggagt gagctgagca gaagttttgt
240
gcccgcctgc ccccatcccc tccaggccac gttttaga
278
```

```
<210> 4322
<211> 85
<212> PRT
<213> Homo sapiens

<400> 4322
Met Gly Ala Gly Gly His Lys Thr Ser Ala Gln Leu Thr Pro Ala Pro
 1               5                  10                  15
His Val Leu Ile Cys Ser Pro Asp Leu Gly Leu Pro Ser Glu Pro Leu
            20                  25                  30
Asn Ala Trp Val Pro Pro Arg Ala Ala Phe His Arg Asp Ala Gly Pro
        35                  40                  45
Ala Val Ala Gly Pro Cys Arg Cys Gly Gly Leu Leu Thr Lys Glu Pro
    50                  55                  60
Gly Leu Ala Ala Trp Asn Asn Leu Gln Val Gly Val Leu Arg Gly Leu
65                  70                  75                  80
Trp Gln Val Leu Gly
                85


<210> 4323
<211> 1542
<212> DNA
<213> Homo sapiens

<400> 4323
ngttacagta aagatggagc aaagtccttg aaaggagatg tgcctgcctc tgaggtgaca
60
ctgaaagact cgacattcag ccagtttagc ccgatctcca gtgctgaaga gtttgatgac
120
gacgagaaga ttgaggtgga tgaccccct gacaaggagg acatgcgatc aagcttcagg
180
tcgaatgtgt tgacggggtc ggctccccag caggactacg ataagctgaa ggcactcgga
240
ggggaaaact ccagcaaaac tggactctct acgtcaggca atgtggagaa aaacaaagct
300
gttaagagag aaacagaagc cagttctata aacctgagtg tttatgaacc ttttaaagtc
360
agaaaagcag aggataaatt gaaggaaagc tctgacaagg tgctggaaaa cagagtccta
420
gatgggaagc tgagctccga gaagaatgac accagcctcc ccagcgttgc gccatcaaag
480
acaaagtcgt cctccaagct ctcgtcctgc atcgctgcca tcgcggctct cagcgctaaa
540
aaggcggctt cagactcctg caaagaacca gtggccaatt cgagggaatc ctccccgtta
600
ccaaaagaag taaatgacag tccgagagcc gctgacaagt ctcctgaatc ccagaatctc
660
atcgacggga ccaaaaaacc atccctgaag caaccggata gtcccagaag catctcaagt
720
gagaacagca gcaaaggatc cccgtcctct cccgcggggt ccacaccagc aatccccaaa
780
gtccgcataa aaaccattaa gacatcttct ggggaaatca agagaacagt gaccagggta
840
```

```
ttgccagaag tggatcttga ctctggaaag aaaccttccg agcagacagc gtccgtcatg
900
gcctctgtga catcccttct gtcgtctcca gcatcagccg ccgtcctttc tctcccccc
960
agggcgcctc tccagtctgc ggtcgtgacc aatgcagttt ccctgcaga gctcaccccc
1020
aaacaggtca caatcaagcc tgtggctact gctttcctcc cagtgtctgc tgtgaagacg
1080
gcaggatccc aagtcattaa tttgaagctc gctaacaaca ccacggtgaa agccacggtc
1140
atatctgctg cctctgtcca gagtgccagc agcgccatca ttaaagctgc caacgccatc
1200
cagcagcaaa ctgtcgtggt gccggcatcc agcctggcca atgccaaact cgtgccaaag
1260
actgtgcacc ttgccaacct taaccttttg cctcagggtg cccaggccac tctgaactc
1320
cgccaagtgc taaccaaacc tcagcaacaa ataaagcagg caataatcaa tgcagcagcc
1380
tcgcaacccc ccaaaaaggt gtctcgagtc caggtggtgt cgtccttgca gagttctgtg
1440
gtggaagctt tcaacaaggt gctgagcagt gtcaatccag tccctgttta catcccaaac
1500
ctcagtcctc ccgccaatgc agggatcacg ttaccgacgc gt
1542
```

```
<210> 4324
<211> 514
<212> PRT
<213> Homo sapiens
```

```
<400> 4324
Xaa Tyr Ser Lys Asp Gly Ala Lys Ser Leu Lys Gly Asp Val Pro Ala
  1               5                  10                  15
Ser Glu Val Thr Leu Lys Asp Ser Thr Phe Ser Gln Phe Ser Pro Ile
             20                  25                  30
Ser Ser Ala Glu Glu Phe Asp Asp Asp Glu Lys Ile Glu Val Asp Asp
         35                  40                  45
Pro Pro Asp Lys Glu Asp Met Arg Ser Ser Phe Arg Ser Asn Val Leu
     50                  55                  60
Thr Gly Ser Ala Pro Gln Gln Asp Tyr Asp Lys Leu Lys Ala Leu Gly
 65                  70                  75                  80
Gly Glu Asn Ser Ser Lys Thr Gly Leu Ser Thr Ser Gly Asn Val Glu
                 85                  90                  95
Lys Asn Lys Ala Val Lys Arg Glu Thr Glu Ala Ser Ser Ile Asn Leu
                100                 105                 110
Ser Val Tyr Glu Pro Phe Lys Val Arg Lys Ala Glu Asp Lys Leu Lys
             115                 120                 125
Glu Ser Ser Asp Lys Val Leu Glu Asn Arg Val Leu Asp Gly Lys Leu
         130                 135                 140
Ser Ser Glu Lys Asn Asp Thr Ser Leu Pro Ser Val Ala Pro Ser Lys
145                 150                 155                 160
Thr Lys Ser Ser Ser Lys Leu Ser Ser Cys Ile Ala Ala Ile Ala Ala
                165                 170                 175
Leu Ser Ala Lys Lys Ala Ala Ser Asp Ser Cys Lys Glu Pro Val Ala
```

```
                  180                      185                      190
Asn Ser Arg Glu Ser Ser Pro Leu Pro Lys Glu Val Asn Asp Ser Pro
          195                      200                      205
Arg Ala Ala Asp Lys Ser Pro Glu Ser Gln Asn Leu Ile Asp Gly Thr
     210                      215                      220
Lys Lys Pro Ser Leu Lys Gln Pro Asp Ser Pro Arg Ser Ile Ser Ser
225                      230                      235                      240
Glu Asn Ser Ser Lys Gly Ser Pro Ser Ser Pro Ala Gly Ser Thr Pro
                  245                      250                      255
Ala Ile Pro Lys Val Arg Ile Lys Thr Ile Lys Thr Ser Ser Gly Glu
                  260                      265                      270
Ile Lys Arg Thr Val Thr Arg Val Leu Pro Glu Val Asp Leu Asp Ser
          275                      280                      285
Gly Lys Lys Pro Ser Glu Gln Thr Ala Ser Val Met Ala Ser Val Thr
          290                      295                      300
Ser Leu Leu Ser Ser Pro Ala Ser Ala Ala Val Leu Ser Ser Pro Pro
305                      310                      315                      320
Arg Ala Pro Leu Gln Ser Ala Val Val Thr Asn Ala Val Ser Pro Ala
                  325                      330                      335
Glu Leu Thr Pro Lys Gln Val Thr Ile Lys Pro Val Ala Thr Ala Phe
                  340                      345                      350
Leu Pro Val Ser Ala Val Lys Thr Ala Gly Ser Gln Val Ile Asn Leu
                  355                      360                      365
Lys Leu Ala Asn Asn Thr Thr Val Lys Ala Thr Val Ile Ser Ala Ala
          370                      375                      380
Ser Val Gln Ser Ala Ser Ser Ala Ile Ile Lys Ala Ala Asn Ala Ile
385                      390                      395                      400
Gln Gln Gln Thr Val Val Val Pro Ala Ser Ser Leu Ala Asn Ala Lys
                  405                      410                      415
Leu Val Pro Lys Thr Val His Leu Ala Asn Leu Asn Leu Leu Pro Gln
                  420                      425                      430
Gly Ala Gln Ala Thr Ser Glu Leu Arg Gln Val Leu Thr Lys Pro Gln
          435                      440                      445
Gln Gln Ile Lys Gln Ala Ile Ile Asn Ala Ala Ala Ser Gln Pro Pro
          450                      455                      460
Lys Lys Val Ser Arg Val Gln Val Val Ser Ser Leu Gln Ser Ser Val
465                      470                      475                      480
Val Glu Ala Phe Asn Lys Val Leu Ser Ser Val Asn Pro Val Pro Val
                  485                      490                      495
Tyr Ile Pro Asn Leu Ser Pro Pro Ala Asn Ala Gly Ile Thr Leu Pro
                  500                      505                      510
Thr Arg
```

```
<210>  4325
<211>  1405
<212>  DNA
<213>  Homo sapiens

<400>  4325
acgcgtgccc ggggtctgct gtgcagcgca gcccgttgtg gtgatacgag ccggagatgc
60
cttctgcagg gactgtttca aggccttcta cgtccacaag ttcatagcca tgctgggcaa
120
```

```
gaaccggctc atctttccag gcgagaaggt agcgtctggg tcctgggggt ctgactgagc
180
agcctggccc ctcgaggtcc ctgcttgtcc ctcccacagg cagcctggcc tgctgcagcc
240
cgccagctcc tccttggcct ttgaggacag actcgatgtc ctagatgtcc acgaggtggg
300
gtgtctgcct gtgttggagg tgcggtgccc tgagtgatgt tttttctccc ccaggtgctc
360
ttggcgtggt ctggggggcc ttcgtccagc tccatggtct ggcaggttct tgagggcctg
420
agccaagatt ctgccaaaag actgcgcttt gtggcaggag tcatctttgt tgacgaggga
480
gcagcctgtg gccagagcct agaggagaga tcaaagaccc tggccgaagt gaagcccatt
540
ctgcaagcaa ctgggttccc atggcatgtg gtggccttag aggaggtgtt cagcctgcca
600
ccgtcggtgc tttggtgctc tgcccaggag ctggtgggat ccgagggggc ctacaaggcg
660
gccgtggaca gcttcctcca gcagcagtat gtgctggggg ccggggtgg tcctggcccg
720
actcaagggg aggaacagcc accccagccc cgctggacc cccagaacct ggcaagaccg
780
cctgccccctg cccagactga ggctctttcc caactgttct gctcagtgag gacactgact
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gccaaggagg agcttctgca gaccctgcgg acccacctga tcctccacat ggcccgagcc
900
cacggctact ccaaggtcat gactggggac agctgcacac gcttggctat caagctcatg
960
accaacctgg cgctgggtcg aggggccttc ctggcctggg atacgggctt ctcggatgag
1020
cggcacgggg acgtggtggt ggtgcggccc atgcgggacc acaccctgaa ggaggtcgct
1080
ttctacaacc gcctgttctc cgttccttct gtcttcacac cagccgtcga caccaaggcc
1140
cctgaaaagg ccagcatcca ccggctgatg gaggccttca tcctcaggct gcagacccag
1200
ttccccctcca ctgtcagcac tgtgtacagg tgtgtgtggg tgtgtgcggg gggtgcgcgg
1260
gtgtgtgctg tgtgcgggtg tgtgcgggtg gtgagctcac cactcgtgct caggccaggg
1320
cttagggtgg agccccagcc cgtgtgattc acctgctcct cccacaatcc ggccacagga
1380
caagtgagaa gcttgtgaag ggccc
1405


<210> 4326
<211> 336
<212> PRT
<213> Homo sapiens


<400> 4326
Met Phe Phe Leu Pro Gln Val Leu Leu Ala Trp Ser Gly Gly Pro Ser
 1               5                   10                  15
Ser Ser Ser Met Val Trp Gln Val Leu Glu Gly Leu Ser Gln Asp Ser
```

3519

```
                    20                    25                    30
Ala Lys Arg Leu Arg Phe Val Ala Gly Val Ile Phe Val Asp Glu Gly
            35                    40                    45
Ala Ala Cys Gly Gln Ser Leu Glu Glu Arg Ser Lys Thr Leu Ala Glu
        50                    55                    60
Val Lys Pro Ile Leu Gln Ala Thr Gly Phe Pro Trp His Val Val Ala
65                    70                    75                    80
Leu Glu Glu Val Phe Ser Leu Pro Pro Ser Val Leu Trp Cys Ser Ala
                    85                    90                    95
Gln Glu Leu Val Gly Ser Glu Gly Ala Tyr Lys Ala Ala Val Asp Ser
            100                   105                   110
Phe Leu Gln Gln Gln Tyr Val Leu Gly Ala Gly Gly Gly Pro Gly Pro
        115                   120                   125
Thr Gln Gly Glu Glu Gln Pro Pro Gln Pro Pro Leu Asp Pro Gln Asn
    130                   135                   140
Leu Ala Arg Pro Pro Ala Pro Ala Gln Thr Glu Ala Leu Ser Gln Leu
145                   150                   155                   160
Phe Cys Ser Val Arg Thr Leu Thr Ala Lys Glu Glu Leu Leu Gln Thr
                165                   170                   175
Leu Arg Thr His Leu Ile Leu His Met Ala Arg Ala His Gly Tyr Ser
            180                   185                   190
Lys Val Met Thr Gly Asp Ser Cys Thr Arg Leu Ala Ile Lys Leu Met
        195                   200                   205
Thr Asn Leu Ala Leu Gly Arg Gly Ala Phe Leu Ala Trp Asp Thr Gly
    210                   215                   220
Phe Ser Asp Glu Arg His Gly Asp Val Val Val Val Arg Pro Met Arg
225                   230                   235                   240
Asp His Thr Leu Lys Glu Val Ala Phe Tyr Asn Arg Leu Phe Ser Val
                245                   250                   255
Pro Ser Val Phe Thr Pro Ala Val Asp Thr Lys Ala Pro Glu Lys Ala
            260                   265                   270
Ser Ile His Arg Leu Met Glu Ala Phe Ile Leu Arg Leu Gln Thr Gln
        275                   280                   285
Phe Pro Ser Thr Val Ser Thr Val Tyr Arg Cys Val Trp Val Cys Ala
    290                   295                   300
Gly Gly Ala Arg Val Cys Ala Val Cys Gly Cys Val Arg Val Val Ser
305                   310                   315                   320
Ser Pro Leu Val Leu Arg Pro Gly Leu Arg Val Glu Pro Gln Pro Val
            325                   330                   335
```

<210> 4327
<211> 551
<212> DNA
<213> Homo sapiens

<400> 4327
tggccacagg cagagccgcc tctgcaggtg acacccaccc caggccgtgc accccacctc
60
caccctcgca ggccacccag acggcagctt ggggaaacct gggaggtccc gtaccctcac
120
tgtgcaggtg gggaaattta gaccctgaaa aagggatgcc ctgagatcac catgagattg
180
aggggcaagc agggctcacc ctgactggct cacttcccag gcacccccat gagcccaggc
240

3520

accgcctgcc accctcactc tccaggaaga gccaccgcgt ggtggccggg atcgtgtggt
300
ggccagggcg tctgaccttg gctctcaccc ggaggccatc caggtgctga ggatggctaa
360
cgctaaggcc acacagccag ggagaggagg tggctcgtga caccacgatg ggacacaccc
420
acctctggga gaggagggtg actccgacag cccttgcctg ccaggatgga gcctggactc
480
tggagggcat cgtgtcctgg agcagcacca gcacctcctg ttgtcaccag gcgtggatgc
540
ccgcatcatg a
551

<210> 4328
<211> 107
<212> PRT
<213> Homo sapiens

<400> 4328
Met Pro Ser Arg Val Gln Ala Pro Ser Trp Gln Ala Arg Ala Val Gly
 1   5   10   15
Val Thr Leu Leu Ser Gln Arg Trp Val Cys Pro Ile Val Val Ser Arg
            20   25   30
Ala Thr Ser Ser Pro Trp Leu Cys Gly Leu Ser Val Ser His Pro Gln
        35   40   45
His Leu Asp Gly Leu Arg Val Arg Ala Lys Val Arg Arg Pro Gly His
    50   55   60
His Thr Ile Pro Ala Thr Thr Arg Trp Leu Phe Leu Glu Ser Glu Gly
65   70   75   80
Gly Arg Arg Cys Leu Gly Ser Trp Gly Cys Leu Gly Ser Glu Pro Val
                85   90   95
Arg Val Ser Pro Ala Cys Pro Ser Ile Ser Trp
                100   105

<210> 4329
<211> 3192
<212> DNA
<213> Homo sapiens

<400> 4329
cttaagactt tcaaagccca ataaaaatat atccaggagg ccagctaca atgagcccaa
60
gccagaggtc acctacatca gccagaaaat ctatgacctc tcagacagca agatttatct
120
tgtacctaaa actttggctc gaaagcgaat ctggaataaa aagtacccca tttgtatcga
180
gcttggtcag caagatgact ttatgtctaa agctcagact gataaggaga cttcagaaga
240
gaagccgcca gctggaggaa gggaggaccc ttagaagcca ccccgccctc aggaggaaca
300
agatctagcc agcgagatca gatactctat ctctttggga gaactggccg agaaaaagag
360
gaatggttta ggagatttat tctggcatct aagctaaagt cggaaatcaa gaagtcatcg
420

3521

```
ggtgtctctg gaggtaaacc agggcttttg cctgcacaca gcagacacaa cagtccgtcc
480
gggcacctga cccacagccg cagcagcagc aaaggcagtg tggaggagat catgtcacag
540
ccaaagcaga aggagctggc aggcagcgtg cggcagaaga tgcttctcga ctacagcgtg
600
tacatgggca ggtgtgtccc ccaggaaagc cgaagccccc agaggagccc cctgcagagt
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gcggagagca gccccacagc tgggaagaag ttgccagagg ttccaccctc tgaggaggaa
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gaacaggaag cctgggtgaa tgccttgctt ggaagaatat tttgggactt cttaggagag
780
aaatactggt ctgatctggt gtctaagaag atccaaatga aactcagcaa aataaagctc
840
ccctacttta tgaatgagct cactctgacg gaacttgaca tgggcgtggc tgtgccaaaa
900
atcctccagg ccttcaagcc ttacgttgat caccaaggac tctggattga tttggaaatg
960
tcctacaatg ggtcctttct gatgactctc gagaccaaaa tgaatttgcc taaactaggt
1020
aaagagcctc ttgttgaagc cctgaaggtt ggagaaattg gcaaagaagg ttgcaggccc
1080
cgggcattct gtctggcgga cagcgatgag gaatcctcca gcgctggctc ctccgaggaa
1140
gacgatgccc cagagcccgc gggggagaca aacagctcct cccagggga agggtacgtt
1200
ggaggtcatc gaacaagtaa gattatgagg tttgttgata aaattaccaa gtcaaaatat
1260
ttccaaaaag caacagagac agagtttata aaaaganaga tcgaagaagt ctccaacaca
1320
cccctgctgc tcactgttga agtacaagaa tgtagaggaa ccttggcggt caacattcca
1380
ccacccccga ctgaccgagt atggtatggt ttccgaaagc caccacatgt ggagctgaaa
1440
gctcggccaa aacttggaga gagagaagtg actttagttc atgtgacaga ctggatagag
1500
aagaaactgg agcaagagtt tcagaaagtt tttgtcatgc caaacatgga tgatgtttat
1560
atcactataa tgcactcagc catggaccct cgctctactt cctgcctcct gaaagaccca
1620
cctgtggagg ctgctgatcg gccatgatgg gtgatgtcag atgttcccca tattgtgaca
1680
tcgagctgga tgtgtggggt tcttggccgc catctgtact gtagcactgg cctctgtgcc
1740
acagctactg tttcttaaag gactgcttct gccctctgcc tgccagtgcc cattccactg
1800
tgaggtgtca ttccctgcat ctagtgacaa ctgtctggat tgcctgctgc aaagctttga
1860
tttggcaaag gagaccatgg aagaatcatg gtggatccag aagttatacg tgacccacac
1920
catggctttt aaaagtctac ccatgtttgt ggcagcaaat gagcacagta agagcaaagc
1980
tgaacaactt gcctcctcta ctcctccaaa gcttttcttc aggcagccgg tgcacagtgg
2040
```

acttttttcac ttctatactt tgtatgcggc cttccacact tccagagaat gtcagtgtgc
2100
aatgtgtctg gagggtgggg agaggaattc tgtgagcctt ttcatttcgg tgacagaaga
2160
gatgggcaga gcaacttatt ttccacatta aattgtgcat ttgggaagca agtagccata
2220
gtacacacac aacacgctat cagcttgggt aaggacagtg ggatttatgt gaacatcagg
2280
caaagccatg agatcaaacc atcccaagcc tttcaccaat gaggtacaac cacctggggg
2340
ctagctaatc ttgaatgttt tcctgagaca ggagcgtatg tgaaaacatc aaacactgca
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2460
tccatctggc gtttcctgtg tcctccaggt ttatatggga atcgaaacag tttgttaatc
2520
tgattgggag agttccatgg gcagatttcc cttcctgaag gccaaaacgg agaactgctc
2580
tctttaatta tttcaagagt caagaccaaa agtttgctca gcatcacact acatctcaaa
2640
attaatgttg ccaacttaat tttgtgcatt tgtgtcagaa tgtttagttt acaaggttgg
2700
gggctctctt tgcttcgaga agtaaaccta ataccatttt tttattgttt aaagctgcat
2760
tcaacgtcaa aattaccttg ggtaactttt gataacttac atgtgtggac aaagctaata
2820
gtggtttttt aaacagcacc ttgcctgaac atgactttaa agaaattaat atattgaaaa
2880
catgtttgaa cccttatttt aattgcacca ttaaaacatt tgacttaaat tgtttgacca
2940
ttccagttgg tgtactgttc tgattttttcg ttgtgtaggc cgatctgcct gtcagagtcc
3000
acgtgtcctg gtcactggtc tttataattg ttgtgcaata actaaaggct aaggactaga
3060
tgcactatcg tgtaaagaga ttacacatga ctgtaccatg ttgcacttaa tcaaatagta
3120
tgtggggatt taaaatcgct tgcattgttt cacaaaataa atatctcaat gtcaaatact
3180
aaaaaaaaaa aa
3192

<210> 4330
<211> 371
<212> PRT
<213> Homo sapiens

<400> 4330
Met Ser Gln Pro Lys Gln Lys Glu Leu Ala Gly Ser Val Arg Gln Lys
1   5   10   15
Met Leu Leu Asp Tyr Ser Val Tyr Met Gly Arg Cys Val Pro Gln Glu
            20   25   30
 Ser Arg Ser Pro Gln Arg Ser Pro Leu Gln Ser Ala Glu Ser Ser Pro
        35   40   45
Thr Ala Gly Lys Lys Leu Pro Glu Val Pro Pro Ser Glu Glu Glu Glu

```
      50                    55                    60
Gln Glu Ala Trp Val Asn Ala Leu Leu Gly Arg Ile Phe Trp Asp Phe
65                    70                    75                    80
Leu Gly Glu Lys Tyr Trp Ser Asp Leu Val Ser Lys Lys Ile Gln Met
              85                    90                    95
Lys Leu Ser Lys Ile Lys Leu Pro Tyr Phe Met Asn Glu Leu Thr Leu
              100                   105                   110
Thr Glu Leu Asp Met Gly Val Ala Val Pro Lys Ile Leu Gln Ala Phe
              115                   120                   125
Lys Pro Tyr Val Asp His Gln Gly Leu Trp Ile Asp Leu Glu Met Ser
              130                   135                   140
Tyr Asn Gly Ser Phe Leu Met Thr Leu Glu Thr Lys Met Asn Leu Pro
145                   150                   155                   160
Lys Leu Gly Lys Glu Pro Leu Val Glu Ala Leu Lys Val Gly Glu Ile
              165                   170                   175
Gly Lys Glu Gly Cys Arg Pro Arg Ala Phe Cys Leu Ala Asp Ser Asp
              180                   185                   190
Glu Glu Ser Ser Ser Ala Gly Ser Ser Glu Glu Asp Asp Ala Pro Glu
              195                   200                   205
Pro Ala Gly Glu Thr Asn Ser Ser Gln Gly Glu Gly Tyr Val Gly
              210                   215                   220
Gly His Arg Thr Ser Lys Ile Met Arg Phe Val Asp Lys Ile Thr Lys
225                   230                   235                   240
Ser Lys Tyr Phe Gln Lys Ala Thr Glu Thr Glu Phe Ile Lys Arg Xaa
              245                   250                   255
Ile Glu Glu Val Ser Asn Thr Pro Leu Leu Leu Thr Val Glu Val Gln
              260                   265                   270
Glu Cys Arg Gly Thr Leu Ala Val Asn Ile Pro Pro Pro Pro Thr Asp
              275                   280                   285
Arg Val Trp Tyr Gly Phe Arg Lys Pro Pro His Val Glu Leu Lys Ala
              290                   295                   300
Arg Pro Lys Leu Gly Glu Arg Glu Val Thr Leu Val His Val Thr Asp
305                   310                   315                   320
Trp Ile Glu Lys Lys Leu Glu Gln Glu Phe Gln Lys Val Phe Val Met
              325                   330                   335
Pro Asn Met Asp Asp Val Tyr Ile Thr Ile Met His Ser Ala Met Asp
              340                   345                   350
Pro Arg Ser Thr Ser Cys Leu Leu Lys Asp Pro Pro Val Glu Ala Ala
              355                   360                   365
Asp Arg Pro
      370
```

```
<210> 4331
<211> 1355
<212> DNA
<213> Homo sapiens

<400> 4331
gaaaaatatt ttaaccataa ggctcttcag cttcttcact gtttccctct ggacatacga
60
ttaaaagatg gcagtttatt ttggcagtca ccaaagaggc caccctctcc aataaaattt
120
gatttaaatg agcctttgca cctcagtttc cttcagaatg ctgcaaaact atatgctaca
180
```

gtatattgta ttccatttgc agaagaggac ttatcagcag atgccctctt gaatattctt
240
tcagaagtaa agattcagga attcaagcct tccaataagg ttgttcaaac agatgaaact
300
gcaaggaaac cagaccatgt tcctattagc agtgaagatg agaggaatgc aattttccaa
360
ctagaaaagg ctattttatc taatgaagcc accaaaagtg accttcagat ggcagtgctt
420
tcatttgaaa aagatgatga tcataatgga cacatagatt tcatcacagc tgcatcaaat
480
cttcgtgcca aaatgtacag cattgaacca gctgaccgtt tcaaaacaaa gcgcatagct
540
ggtaaaatta tacctgctat agcaacaacc actgctacag tttctggctt ggttgccttg
600
gagatgatca agtaactgg tggctatcca tttgaagctt acaaaaattg ttttcttaac
660
ttagccattc caattgtagt atttacagag acaactgaag taaggaaaac taaaatcaga
720
aatggaatat catttacaat ttgggatcga tggaccgtac atggaaaaga agatttcacc
780
ctcttggatt tcataaatgc agtcaaagag aagtatggaa ttgagccaac aatggtggta
840
cagggagtca aaatgcttta tgttcctgta atgcctggtc atgcaaaaag attgaagtta
900
acaatgcata aacttgtaaa acctactact gaaaagaaat atgtggatct tactgtgtca
960
tttgctccag acattgatgg agatgaagat ttgccgggac ctccagtaag atactacttc
1020
agtcatgaca ctgattaata caagttgtct taacgttact ccaggaccac ttgattttgg
1080
aaagagtgca cttaattcag aagctaaaga aaatcagttc ataatactat ggatttctct
1140
ttcattaagc cttaatttta agggaaacat cagtaagaaa ctgcactgaa gaattataaa
1200
acattttggg gcatagcata cacttgtcta acggttcaca cgtggctatg atcacaagca
1260
actttgaact ggaatgctat ttataaaagt tttgtgtatt aatctgtgta ttaatctctc
1320
tggataaaaa gaaggaaaaa atatgtatga ccggt
1355

<210> 4332
<211> 345
<212> PRT
<213> Homo sapiens

<400> 4332
Glu Lys Tyr Phe Asn His Lys Ala Leu Gln Leu Leu His Cys Phe Pro
1   5   10   15
Leu Asp Ile Arg Leu Lys Asp Gly Ser Leu Phe Trp Gln Ser Pro Lys
            20   25   30
Arg Pro Pro Ser Pro Ile Lys Phe Asp Leu Asn Glu Pro Leu His Leu
        35   40   45
Ser Phe Leu Gln Asn Ala Ala Lys Leu Tyr Ala Thr Val Tyr Cys Ile

```
          50                    55                   60
Pro Phe Ala Glu Glu Asp Leu Ser Ala Asp Ala Leu Leu Asn Ile Leu
65                   70                   75                   80
Ser Glu Val Lys Ile Gln Glu Phe Lys Pro Ser Asn Lys Val Val Gln
                85                   90                   95
Thr Asp Glu Thr Ala Arg Lys Pro Asp His Val Pro Ile Ser Ser Glu
            100                  105                  110
Asp Glu Arg Asn Ala Ile Phe Gln Leu Glu Lys Ala Ile Leu Ser Asn
        115                  120                  125
Glu Ala Thr Lys Ser Asp Leu Gln Met Ala Val Leu Ser Phe Glu Lys
    130                  135                  140
Asp Asp Asp His Asn Gly His Ile Asp Phe Ile Thr Ala Ala Ser Asn
145                  150                  155                  160
Leu Arg Ala Lys Met Tyr Ser Ile Glu Pro Ala Asp Arg Phe Lys Thr
                165                  170                  175
Lys Arg Ile Ala Gly Lys Ile Ile Pro Ala Ile Ala Thr Thr Thr Ala
            180                  185                  190
Thr Val Ser Gly Leu Val Ala Leu Glu Met Ile Lys Val Thr Gly Gly
        195                  200                  205
Tyr Pro Phe Glu Ala Tyr Lys Asn Cys Phe Leu Asn Leu Ala Ile Pro
    210                  215                  220
Ile Val Val Phe Thr Glu Thr Thr Glu Val Arg Lys Thr Lys Ile Arg
225                  230                  235                  240
Asn Gly Ile Ser Phe Thr Ile Trp Asp Arg Trp Thr Val His Gly Lys
                245                  250                  255
Glu Asp Phe Thr Leu Leu Asp Phe Ile Asn Ala Val Lys Glu Lys Tyr
            260                  265                  270
Gly Ile Glu Pro Thr Met Val Val Gln Gly Val Lys Met Leu Tyr Val
        275                  280                  285
Pro Val Met Pro Gly His Ala Lys Arg Leu Lys Leu Thr Met His Lys
    290                  295                  300
Leu Val Lys Pro Thr Thr Glu Lys Lys Tyr Val Asp Leu Thr Val Ser
305                  310                  315                  320
Phe Ala Pro Asp Ile Asp Gly Asp Glu Asp Leu Pro Gly Pro Pro Val
                325                  330                  335
Arg Tyr Tyr Phe Ser His Asp Thr Asp
            340                  345
```

<210> 4333
<211> 1278
<212> DNA
<213> Homo sapiens

<400> 4333
cggccgcagc gccgtctgct cagcgcccgg gtcaatagga gccagtcctt cgcaggcgtc
60
ctcggcagcc acgagcgggg gcccaggagt ttcccggtct tcagcccgcc ggggccccca
120
cggaagcccc ccgcgctctc ccgagtgtcc aggatgtttt ccgtggctca cccagccgcc
180
aaggtgccgc agcccgagcg gctggacctg gtgtacacgg cgctgaagcg gggcctgacg
240
gcctacttgg aagtgcacca gcaggagcaa gagaaactcc aggggcagat aagggagtcc
300

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aagaggaatt cccgcttggg cttcctgtat gatctggaca agcaagtcaa gtccattgaa
360
cgcttcctgc gacgactgga gttccatgcc agcaagatcg atgagctgta tgaggcatac
420
tgtgtccagc ggcgtctccg ggatggtgcc tacaacatgg tccgtgccta caccactggg
480
tccccgggaa gccgagaggc ccgggacagc ctggcagagg ccactcgggg gcatcgcgag
540
tacacggagg tagggatgg gggcccatga agcagaggca cagggtgtgg cagggctagt
600
ggctggccct tgaccccctc ctgtccctgc ccctccctcc caagcatgtg tctgctggag
660
agcgagctgg aggcacagct gggcgagttt catctccgaa tgaaagggct ggctggcttc
720
gccaggctgt gtgtaggcga tcagtatgag atctgcatga aatatgggcg tcagcgctgg
780
aaactacggg gccgaattga gggtagtgga aagcaggtgt gggacagtga agaaaccatc
840
tttctccctc tactcacgga atttctgtct attaaggtga cagaactgaa gggcctggcc
900
aaccatgtgg ttgtgggcag tgtctcctgt gagaccaagg acctgtttgc cgccctgccc
960
caggttgtgg ctgtggatat caatgacctt ggtaccatca agctcagcct ggaagtcaca
1020
tggagcccct tcgacaagga tgaccagccc tcagctgctt cttctgtcaa caaggcctcc
1080
acagtcacca agcgcttctc cacctatagc cagagcccac cggacacacc ctcacttcgg
1140
gaacaggctt tctataacat gctgcgacgg caggaggagc tggagaatgg gacagcatgg
1200
tccctgtcat ctgaatcttc agacgactca tccagcccac agctctcagg cactgcccgc
1260
cactcaccag cccctagg
1278


<210> 4334
<211> 189
<212> PRT
<213> Homo sapiens


<400> 4334
Arg Pro Gln Arg Arg Leu Leu Ser Ala Arg Val Asn Arg Ser Gln Ser
 1               5                   10                  15
Phe Ala Gly Val Leu Gly Ser His Glu Arg Gly Pro Arg Ser Phe Pro
            20                  25                  30
Val Phe Ser Pro Pro Gly Pro Pro Arg Lys Pro Pro Ala Leu Ser Arg
        35                  40                  45
Val Ser Arg Met Phe Ser Val Ala His Pro Ala Ala Lys Val Pro Gln
    50                  55                  60
Pro Glu Arg Leu Asp Leu Val Tyr Thr Ala Leu Lys Arg Gly Leu Thr
65                  70                  75                  80
Ala Tyr Leu Glu Val His Gln Gln Glu Gln Glu Lys Leu Gln Gly Gln
                85                  90                  95
Ile Arg Glu Ser Lys Arg Asn Ser Arg Leu Gly Phe Leu Tyr Asp Leu
```

```
                     100                    105                    110
Asp Lys Gln Val Lys Ser Ile Glu Arg Phe Leu Arg Arg Leu Glu Phe
        115                    120                    125
His Ala Ser Lys Ile Asp Glu Leu Tyr Glu Ala Tyr Cys Val Gln Arg
    130                    135                    140
Arg Leu Arg Asp Gly Ala Tyr Asn Met Val Arg Ala Tyr Thr Thr Gly
145                    150                    155                    160
Ser Pro Gly Ser Arg Glu Ala Arg Asp Ser Leu Ala Glu Ala Thr Arg
                   165                    170                    175
Gly His Arg Glu Tyr Thr Glu Val Gly Asp Gly Gly Pro
               180                    185
```

<210> 4335
<211> 1211
<212> DNA
<213> Homo sapiens

<400> 4335

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cacaacctgg acaagcgcag tgctcactag tgggagagga agggccaaga tctggctggg
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gatggggagg agtggctccc cccacttaaa acatttgtgc cctctgtatc cccattccag
120
ctggccttgg gtgcggcact cgtgaatgta cagatccccc tgctcctggg ccagctggta
180
gaggtcgtgg ccaagtacac aagggaccac gtagggagtt tcatgactga gtctcagaat
240
ctcagcaccc acctgcttat cctctatggt gtccagggac tgctgacctt cgggtacctg
300
gtgctgctgt cccacgttgg cgagcgcatg gctgtggaca tgcggagggc cctcttcagc
360
tccctgctcc acaagacat caccttcttt gacgccaata agacagggca gctggtgagc
420
cgcttgacaa ctgacgtgca ggagtttaag tcatccttca gcttgtcat ctcccagggg
480
ctgcgaagct gcacccaggt ggcaggctgc ctggtgtccc tgtccatgct gtcgacacgc
540
ctcacgctgc tgctgatggt ggccacacca gccctgatgg gagtgggcac cctgatgggc
600
tcaggcctcc gaaaattgtc tcgccagtgt caggagcaga tcgccagggc aatgggcgta
660
gcagacgagg ccctgggcaa tgtgcggact gtgcgtgcct tcgccatgga gcaacgggaa
720
gaggagcgct atggggcaga gctggaagcc tgccgctgcc gggcagagga gctgggccgc
780
ggcatcgcct tgttccaagg gctttccaac atcgccttca actgcatggt cttgggtacc
840
ctatttattg ggggctccct tgtggccgga cagcagctga caggggagga cctcatgtcc
900
ttcctggtgg cctcccagac agtgcaaagc ttcctccgtg ttgcaccctg tccgaattcc
960
cttccgctgc aggctgtgac actccatgca tggaaggacc atccttgaca ggctgtgtga
1020
gctgcccttc cccatgcctg ccacttccag ggatgacaag ctgacccctg tccccacaca
1080
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ccccacccctt atagcttatt gctttgcgtt ggtccaaaac cacccgctca gctgagcctc
1140
tgggatgacc agagctgatc accagacagc tcaaggcggg cctccccca gaggctggag
1200
tgtgctcgcg a
1211

<210> 4336
<211> 325
<212> PRT
<213> Homo sapiens

<400> 4336
Trp Glu Arg Lys Gly Gln Asp Leu Ala Gly Asp Gly Glu Glu Trp Leu
  1   5   10   15
Pro Pro Leu Lys Thr Phe Val Pro Ser Val Ser Pro Phe Gln Leu Ala
             20   25   30
Leu Gly Ala Ala Leu Val Asn Val Gln Ile Pro Leu Leu Leu Gly Gln
             35   40   45
Leu Val Glu Val Val Ala Lys Tyr Thr Arg Asp His Val Gly Ser Phe
          50   55   60
Met Thr Glu Ser Gln Asn Leu Ser Thr His Leu Leu Ile Leu Tyr Gly
65   70   75   80
Val Gln Gly Leu Leu Thr Phe Gly Tyr Leu Val Leu Leu Ser His Val
                85   90   95
Gly Glu Arg Met Ala Val Asp Met Arg Arg Ala Leu Phe Ser Ser Leu
             100   105   110
Leu Arg Gln Asp Ile Thr Phe Phe Asp Ala Asn Lys Thr Gly Gln Leu
             115   120   125
Val Ser Arg Leu Thr Thr Asp Val Gln Glu Phe Lys Ser Ser Phe Lys
          130   135   140
Leu Val Ile Ser Gln Gly Leu Arg Ser Cys Thr Gln Val Ala Gly Cys
145   150   155   160
Leu Val Ser Leu Ser Met Leu Ser Thr Arg Leu Thr Leu Leu Leu Met
                165   170   175
Val Ala Thr Pro Ala Leu Met Gly Val Gly Thr Leu Met Gly Ser Gly
             180   185   190
Leu Arg Lys Leu Ser Arg Gln Cys Gln Glu Gln Ile Ala Arg Ala Met
             195   200   205
Gly Val Ala Asp Glu Ala Leu Gly Asn Val Arg Thr Val Arg Ala Phe
          210   215   220
Ala Met Glu Gln Arg Glu Glu Glu Arg Tyr Gly Ala Glu Leu Glu Ala
225   230   235   240
Cys Arg Cys Arg Ala Glu Glu Leu Gly Arg Gly Ile Ala Leu Phe Gln
                245   250   255
Gly Leu Ser Asn Ile Ala Phe Asn Cys Met Val Leu Gly Thr Leu Phe
             260   265   270
Ile Gly Gly Ser Leu Val Ala Gly Gln Gln Leu Thr Gly Gly Asp Leu
             275   280   285
Met Ser Phe Leu Val Ala Ser Gln Thr Val Gln Ser Phe Leu Arg Val
             290   295   300
Ala Pro Cys Pro Asn Ser Leu Pro Leu Gln Ala Val Thr Leu His Ala
305   310   315   320
Trp Lys Asp His Pro

325

<210> 4337
<211> 461
<212> DNA
<213> Homo sapiens

<400> 4337
tctattatgt tgtcctgatt acatatcagc aaaatgtttt tctggggcat tgtgcataaa
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acaaaggaga aaacaacatc tctagccggc cagcgtgcct gtccctccct cccgcagagg
120
cctgggaggc tgagggtgag gaaggccagc tgtgctggct gcagagggct ttgctgtttc
180
tccacagagc agcaggtcgc cccttccctt ctccctccct ccacctcacc tccatgggct
240
ccactggatg ggaaccatgt gcttgttctc cccacccta gactgggatc tcctggggca
300
gaagaggctt cccaagtggc acagacagag ccaggctgac tgaatgtgag attcatgaat
360
gaacagtgat accaggcata gccctgccct ttagcatcct gagggccacg tggagttttc
420
tgcaacactg cccgccgtgt tccagcatct gccttccact t
461

<210> 4338
<211> 118
<212> PRT
<213> Homo sapiens

<400> 4338
Met Asn Leu Thr Phe Ser Gln Pro Gly Ser Val Cys Ala Thr Trp Glu
1   5   10   15
Ala Ser Ser Ala Pro Gly Asp Pro Ser Leu Gly Val Gly Arg Thr Ser
            20   25   30
Thr Trp Phe Pro Ser Ser Gly Ala His Gly Gly Glu Val Glu Gly Gly
        35   40   45
Arg Arg Glu Gly Ala Thr Cys Cys Ser Val Glu Lys Gln Gln Ser Pro
    50   55   60
Leu Gln Pro Ala Gln Leu Ala Phe Leu Thr Leu Ser Leu Pro Gly Leu
65   70   75   80
Cys Gly Arg Glu Gly Gln Ala Arg Trp Pro Ala Arg Asp Val Val Phe
                85   90   95
Ser Phe Val Leu Cys Thr Met Pro Gln Lys Asn Ile Leu Leu Ile Cys
                100   105   110
Asn Gln Asp Asn Ile Ile
        115

<210> 4339
<211> 5269
<212> DNA
<213> Homo sapiens

<400> 4339

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nnagccatgc ccacgaactt tacggtggtg cccgtggagg ctcacgccga cggcggcggg
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gacgagactg ccgagcggac ggaggctccg ggcacccccg agggccccga gcccgagcgc
120
cccagcccgg gagatggaaa tccaagagaa aacagcccat tcctcaacaa tgtcgaggtg
180
gaacaagaga gcttctttga agggaagaac atggcacttt tcgaggagga gatggacagt
240
aaccccatgg tgtcctcgct gctcaacaag ctggccaact acaccaacct gagccagggc
300
gtggtggagc acgaggagga cgaggagagc cggcggcggg aggccaaggc tccgcgcatg
360
ggcaccttca tcggcgtcta cctgccgtgc ctgcagaaca tcctgggcgt catcctcttc
420
ctgcgcctga cgtggatcgt gggggtggct ggtgtcctgg agtccttcct catcgtggcc
480
atgtgctgca catgtacaat gctgaccgcc atttccatga gtgcgatcgc taccaacggt
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660
gggaccatcg agatttttct gacgtacatc tccccgggtg cggccatctt ccaggcggag
720
gctgcaggtg gcgaggcggc cgccatgctg cacaacatgc gtgtgtacgg cacgtgcacg
780
ctcgtgctca tggccctggt ggtcttcgtg ggcgtcaagt atgtcaacaa gctggcgctg
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900
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960
agcttcgatg cctgcgtcaa ggcctacggc atccacaaca actcagccac ctccgcgctc
1020
tggggcctct tctgcaacgg ctcccagccc agcgccgcct gtgacgagta cttcatccag
1080
aacaacgtca ccgaaatcca gggcatcccg ggcgcggcca gtggtgtctt cctggagaac
1140
ctgtggagta cgtacgcgca cgcggggggcg tttgtggaga agaaaggtgt gccctcggtg
1200
cccgtggcag aggagagccg tgccagcgca ctgccctacg tgctcaccga catcgcggcc
1260
tccttcaccc tgctggttgg catctacttc ccttccgtga ccggtatcat ggcgggttca
1320
aaccggtccg gggacctcaa ggatgcacag aagtccatcc ccacggggac catcctggcc
1380
atagtgacga cgtctttcat ctatctctcc tgcattgtgc tgtttggggc ctgcattgaa
1440
ggcgtggtct tacgagataa gttcggggag ccctgcagg ggaacctggt catcggcatg
1500
ctggcctggc cctcccctg ggtcatcgtc atcggctcct tcttctccac ctgcggtgcc
1560
ggcctgcaga ccctcacggg ggcaccgcgc ctactgcagg ccattgcccg tgacggcatc
1620
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gtccccttcc tgcaggtgtt tggccacggg aaggccaacg gggagcccac gtgggcgctg
1680
ctgctgacag tcctcatctg cgagactggc atcctcatcg cctctctgga cagcgtggcc
1740
ccgatcctct ccatgttctt cctcatgtgc tacctgttcg tgaacctggc ctgcgccgtg
1800
cagaccctgc tacgtacccc caactggcgt ccacgcttca agttctacca ctggaccctg
1860
tcctttctgg gtatgagcct gtgcctggcg ctgatgttca tctgctcctg gtactacgcg
1920
ctgtccgcca tgctcatcgc tggctgcatc tacaagtaca tcgagtaccg cggggccgag
1980
aaggagtggg gcgatggcat ccgtggccta tccctgaacg ccgcccgcta cgccctgctg
2040
cgcgtggagc acggtccccc ccacaccaag aactggaggc cccaggtgct ggtgatgctg
2100
aacctggacg cggagcaggc cgtgaagcac ccccgcctgc tgtccttcac gtcgcagctg
2160
aaggccggca agggcctgac catcgtgggc tcggtgctgg aggggacgta cctggacaag
2220
cacatggagg ctcagcgggc cgaggagaac atacggtccc taatgagcac agagaagacc
2280
aagggcttct gccagctggt ggtctcgtcc agcctgcggg atggcatgtc ccacctgatc
2340
cagtcggccg gcctgggcgg cctgaagcac aacacggtgc tcatggcctg gcccgcatcc
2400
tggaagcagg aggacaaccc cttctcctgg aagaactttg tagacaccgt ccgcgacacc
2460
accgccgcgc accaggctct gctggtggcc aagaacgtcg actcgtttcc gcaaaaccag
2520
gagcgcttcg gcgggggcca catcgacgtg tggtggatcg tgcacgacgg cggcatgctc
2580
atgctgctgc ccttcctgct gcgccagcac aaggtgtgga ggaagtgccg gatgcgtatc
2640
ttcaccgtgg cccaggtgga cgacaacagc atccagatga agaaggacct gcagatgttc
2700
ttgtatcact tgcgcatcag cgccgaggtg gaggtggtgg agatggttga aaacgacata
2760
tctgctttca cctacgagag gacactaatg atggagcaga ggtcgcagat gctgaagcag
2820
atgcagctgt ccaagaacga gcaggagcga gaggcccagc tgatccacga caggaacacc
2880
gcgtcccaca ccgcggcggc agccaggacc caagcgccgc ctacgccaga caaggtgcag
2940
atgacctgga ccagggagaa gctgatcgct gagaagtaca ggagcagaga caccagccta
3000
tccggtttca agacctctt cagcatgaag ccagaatggg gaaacctgga ccagtccaac
3060
gtcaggcgga tgcacacggc tgtgaagctc aatggcgtcg tcctcaacaa gtcccaggat
3120
gcgcagctgg tcctgctcaa catgccaggt cctcccaaaa accggcaggg agacgagaac
3180
tacatggagt ttcttgaagt cctgaccgag gggctgaaca gagtcctcct ggtcaggggt
3240
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ggcggccggg aggtgatcac catctactcc taatgcccaa cagcatcacg gcactctggg
3300
acaggcacgg aggacggcgt gggcagcctg ggcctgggct tggcccaggg aaacagacgg
3360
cagacacacc tgtcccccag tgatgccgcc caagctgccc atggggcttc ctacggaagt
3420
ttctaggccc gtcacctagg gctctcctgt tcagccttaa caggctcagc aaatcagggc
3480
gtggctggac gatttccttg catctgaggg cagacgctgc taccggagtg acctggacgt
3540
ggccagatct tctcgcaggt cacaagaagc cagtgagccc ttgccttggt ttctggaagt
3600
tcttttcctt ggctggattt acccagtggt taggttgcat ttctacccca tccagaacat
3660
tcttggaaga gcacccggag ctgaagctgt ccctgatgat gaaggtgaaa cgtcagccct
3720
ggccatggct ccgctcaggg ccccggtcac ctccgagtca ctctgttcct tgactgtctt
3780
tgtgtttctg tacctcaagg cactgaagct ggaggactct gtccatgccc gtgtcaccct
3840
cgtgtgggag cctctgggct cggcaggtcc acatttcatg agctgaggcg tgggccaggg
3900
ccatctggaa agggaactcg gcttttccag aacgtggtgg atcatctgtc gggtgtgtgg
3960
tgaacacgtt cagttcatca gggcctacgc tccgggaagg gcccccagc tgtggctctg
4020
ccatgccggg ctgtgtttgc agctgtccga gtctccatcc acctttagaa aaccagccac
4080
ttcttttcat aagcactgac agggcccagc ccacagccac aggtgcgatc agtgcctcac
4140
gcaggcaaat gcactgaaac ccaggggcac acgcgcgcag agtgaacagt gagttccccc
4200
gacagcccac gacagccagg actgccctcc ccaccccacc ccaccccagg agcacggcac
4260
acagttcagc ctctgagctg gctcacacgt gccatcccca ccccggtgct ccagggaagg
4320
aggacacgga cccgacgtgg gaggtcctca ggcagcagtg gcgcctggtg tcaggtctgt
4380
ctggctgagt cccgggcgtc ccctgccatg gcctgtgcct tgcatggagg cggcggtggc
4440
actgaagaga tagctttcaa gggcccaaca ctttgcactt cggctggctg tgagtttctg
4500
ctttgtaggt tgtggtcaca tttgcaggct gcgggcagtg gcaccgactt gggcctccct
4560
ttctatgtgg catatttatt tatttaaaca ccccagggag ttacgtggta acaaggttgt
4620
ccataaagag gttgcttcta tatactagag gccccagatg gccaggcctt gggctacgtc
4680
tggcttgcat ggtctcccaa gggaatcagc cccatcaaca aagttcaaat cggggcagag
4740
gctgcacttg tgcccccaga tgtttctgag gagccagact agggctggca ttgctgtaga
4800
gtgacggctg ctgcccagag cgtgtcccag acatcacagc ggggctcagc agttcccaca
4860
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3533

gcctctgcct gccttggcta agcatgagtt aagcagcaaa acgctcctcc atgtctggat
4920

ggggccggca ggtcctgtgt cccctgcacc tggaggagag caggctagag gcacagcggc
4980

cacatggtgc tggctctgaa cgttggttgg tggctggaaa acagccctgc ttctgagggc
5040

cgctcagttc tgcacacgaa accacctcct gagggctcag ctctgccccc gccctgggct
5100

gcagcctctg cacgcaagca ccaggcatcc tttgtgttgt caactccgtg taaccagtaa
5160

ctacagccat ttacaattga ctccgtttcc ttttgtaggt ttccctgtct gtctgtgtta
5220

gtagaaaaat aaaatcctat gaaatctgaa aaaaaaaaa aaaaaaaa
5269

<210> 4340
<211> 1088
<212> PRT
<213> Homo sapiens

<400> 4340
Met Pro Thr Asn Phe Thr Val Val Pro Val Glu Ala His Ala Asp Gly
1   5   10   15
Gly Gly Asp Glu Thr Ala Glu Arg Thr Glu Ala Pro Gly Thr Pro Glu
            20   25   30
Gly Pro Glu Pro Glu Arg Pro Ser Pro Gly Asp Gly Asn Pro Arg Glu
            35   40   45
Asn Ser Pro Phe Leu Asn Asn Val Glu Val Glu Gln Glu Ser Phe Phe
        50   55   60
Glu Gly Lys Asn Met Ala Leu Phe Glu Glu Glu Met Asp Ser Asn Pro
65   70   75   80
Met Val Ser Ser Leu Leu Asn Lys Leu Ala Asn Tyr Thr Asn Leu Ser
                85   90   95
Gln Gly Val Val Glu His Glu Glu Asp Glu Glu Ser Arg Arg Arg Glu
            100   105   110
Ala Lys Ala Pro Arg Met Gly Thr Phe Ile Gly Val Tyr Leu Pro Cys
        115   120   125
Leu Gln Asn Ile Leu Gly Val Ile Leu Phe Leu Arg Leu Thr Trp Ile
        130   135   140
Val Gly Val Ala Gly Val Leu Glu Ser Phe Leu Ile Val Ala Met Cys
145   150   155   160
Cys Thr Cys Thr Met Leu Thr Ala Ile Ser Met Ser Ala Ile Ala Thr
                165   170   175
Asn Gly Val Val Pro Ala Gly Gly Ser Tyr Tyr Met Ile Ser Arg Ser
            180   185   190
Leu Gly Pro Glu Phe Gly Gly Ala Val Gly Leu Cys Phe Tyr Leu Gly
            195   200   205
Thr Thr Phe Ala Gly Ala Met Tyr Ile Leu Gly Thr Ile Glu Ile Phe
        210   215   220
Leu Thr Tyr Ile Ser Pro Gly Ala Ala Ile Phe Gln Ala Glu Ala Ala
225   230   235   240
Gly Gly Glu Ala Ala Ala Met Leu His Asn Met Arg Val Tyr Gly Thr
                245   250   255
Cys Thr Leu Val Leu Met Ala Leu Val Val Phe Val Gly Val Lys Tyr

```
                 260                      265                      270
Val Asn Lys Leu Ala Leu Val Phe Leu Ala Cys Val Val Leu Ser Ile
        275                      280                      285
Leu Ala Ile Tyr Ala Gly Val Ile Lys Ser Ala Phe Asp Pro Pro Asp
    290                      295                      300
Ile Pro Val Cys Leu Leu Gly Asn Arg Thr Leu Ser Arg Arg Ser Phe
305                      310                      315                      320
Asp Ala Cys Val Lys Ala Tyr Gly Ile His Asn Asn Ser Ala Thr Ser
                325                      330                      335
Ala Leu Trp Gly Leu Phe Cys Asn Gly Ser Gln Pro Ser Ala Ala Cys
                340                      345                      350
Asp Glu Tyr Phe Ile Gln Asn Asn Val Thr Glu Ile Gln Gly Ile Pro
        355                      360                      365
Gly Ala Ala Ser Gly Val Phe Leu Glu Asn Leu Trp Ser Thr Tyr Ala
        370                      375                      380
His Ala Gly Ala Phe Val Glu Lys Lys Gly Val Pro Ser Val Pro Val
385                      390                      395                      400
Ala Glu Glu Ser Arg Ala Ser Ala Leu Pro Tyr Val Leu Thr Asp Ile
                405                      410                      415
Ala Ala Ser Phe Thr Leu Leu Val Gly Ile Tyr Phe Pro Ser Val Thr
                420                      425                      430
Gly Ile Met Ala Gly Ser Asn Arg Ser Gly Asp Leu Lys Asp Ala Gln
        435                      440                      445
Lys Ser Ile Pro Thr Gly Thr Ile Leu Ala Ile Val Thr Thr Ser Phe
    450                      455                      460
Ile Tyr Leu Ser Cys Ile Val Leu Phe Gly Ala Cys Ile Glu Gly Val
465                      470                      475                      480
Val Leu Arg Asp Lys Phe Gly Glu Ala Leu Gln Gly Asn Leu Val Ile
                485                      490                      495
Gly Met Leu Ala Trp Pro Ser Pro Trp Val Ile Val Ile Gly Ser Phe
        500                      505                      510
Phe Ser Thr Cys Gly Ala Gly Leu Gln Thr Leu Thr Gly Ala Pro Arg
        515                      520                      525
Leu Leu Gln Ala Ile Ala Arg Asp Gly Ile Val Pro Phe Leu Gln Val
    530                      535                      540
Phe Gly His Gly Lys Ala Asn Gly Glu Pro Thr Trp Ala Leu Leu Leu
545                      550                      555                      560
Thr Val Leu Ile Cys Glu Thr Gly Ile Leu Ile Ala Ser Leu Asp Ser
                565                      570                      575
Val Ala Pro Ile Leu Ser Met Phe Phe Leu Met Cys Tyr Leu Phe Val
        580                      585                      590
Asn Leu Ala Cys Ala Val Gln Thr Leu Leu Arg Thr Pro Asn Trp Arg
        595                      600                      605
Pro Arg Phe Lys Phe Tyr His Trp Thr Leu Ser Phe Leu Gly Met Ser
    610                      615                      620
Leu Cys Leu Ala Leu Met Phe Ile Cys Ser Trp Tyr Tyr Ala Leu Ser
625                      630                      635                      640
Ala Met Leu Ile Ala Gly Cys Ile Tyr Lys Tyr Ile Glu Tyr Arg Gly
                645                      650                      655
Ala Glu Lys Glu Trp Gly Asp Gly Ile Arg Gly Leu Ser Leu Asn Ala
        660                      665                      670
Ala Arg Tyr Ala Leu Leu Arg Val Glu His Gly Pro Pro His Thr Lys
        675                      680                      685
Asn Trp Arg Pro Gln Val Leu Val Met Leu Asn Leu Asp Ala Glu Gln
```

```
          690                    695                    700
Ala Val Lys His Pro Arg Leu Leu Ser Phe Thr Ser Gln Leu Lys Ala
705                    710                    715                    720
Gly Lys Gly Leu Thr Ile Val Gly Ser Val Leu Glu Gly Thr Tyr Leu
              725                    730                    735
Asp Lys His Met Glu Ala Gln Arg Ala Glu Glu Asn Ile Arg Ser Leu
              740                    745                    750
Met Ser Thr Glu Lys Thr Lys Gly Phe Cys Gln Leu Val Val Ser Ser
              755                    760                    765
Ser Leu Arg Asp Gly Met Ser His Leu Ile Gln Ser Ala Gly Leu Gly
          770                    775                    780
Gly Leu Lys His Asn Thr Val Leu Met Ala Trp Pro Ala Ser Trp Lys
785                    790                    795                    800
Gln Glu Asp Asn Pro Phe Ser Trp Lys Asn Phe Val Asp Thr Val Arg
              805                    810                    815
Asp Thr Thr Ala Ala His Gln Ala Leu Leu Val Ala Lys Asn Val Asp
              820                    825                    830
Ser Phe Pro Gln Asn Gln Glu Arg Phe Gly Gly Gly His Ile Asp Val
              835                    840                    845
Trp Trp Ile Val His Asp Gly Gly Met Leu Met Leu Leu Pro Phe Leu
          850                    855                    860
Leu Arg Gln His Lys Val Trp Arg Lys Cys Arg Met Arg Ile Phe Thr
865                    870                    875                    880
Val Ala Gln Val Asp Asp Asn Ser Ile Gln Met Lys Lys Asp Leu Gln
              885                    890                    895
Met Phe Leu Tyr His Leu Arg Ile Ser Ala Glu Val Glu Val Val Glu
          900                    905                    910
Met Val Glu Asn Asp Ile Ser Ala Phe Thr Tyr Glu Arg Thr Leu Met
          915                    920                    925
Met Glu Gln Arg Ser Gln Met Leu Lys Gln Met Gln Leu Ser Lys Asn
          930                    935                    940
Glu Gln Glu Arg Glu Ala Gln Leu Ile His Asp Arg Asn Thr Ala Ser
945                    950                    955                    960
His Thr Ala Ala Ala Ala Arg Thr Gln Ala Pro Pro Thr Pro Asp Lys
              965                    970                    975
Val Gln Met Thr Trp Thr Arg Glu Lys Leu Ile Ala Glu Lys Tyr Arg
          980                    985                    990
Ser Arg Asp Thr Ser Leu Ser Gly Phe Lys Asp Leu Phe Ser Met Lys
          995                    1000                   1005
Pro Glu Trp Gly Asn Leu Asp Gln Ser Asn Val Arg Arg Met His Thr
          1010                   1015                   1020
Ala Val Lys Leu Asn Gly Val Val Leu Asn Lys Ser Gln Asp Ala Gln
1025                   1030                   1035                   1040
Leu Val Leu Leu Asn Met Pro Gly Pro Pro Lys Asn Arg Gln Gly Asp
              1045                   1050                   1055
Glu Asn Tyr Met Glu Phe Leu Glu Val Leu Thr Glu Gly Leu Asn Arg
              1060                   1065                   1070
Val Leu Leu Val Arg Gly Gly Gly Arg Glu Val Ile Thr Ile Tyr Ser
          1075                   1080                   1085
```

<210> 4341
<211> 693
<212> DNA
<213> Homo sapiens

<400> 4341
agatctaagt agttgtttta tattgagaaa gcaacaatgt ttctcgaata agttgatgtt
60
gattttaaat tataagcttt aaagaatttt ttttctagaa aaaggggatg gaaaaaaaag
120
gacctgaggg agccatatgc atcaagtgag tgtttctcca taacagaata tttataagag
180
aacatgtata gtgccctctt ttgagtgatg ccgacagaca ccaagccctc cttttcacca
240
agtcccaggc ttgcattcca gcctcttgag ctctgccctc tctcaggtgg atctttgtgt
300
tggaccttac gtttcagcaa cctcaccatg gccacataac ccacaacctt ttaaaacagt
360
ttctttcata gcaatccctg tttctgccag acagatctaa aatgggagtt tctcactgtg
420
tttatctgat ctgcacactt tatatccagc tgttttggca cttttacgtt ttcttcacct
480
ttggtttttgg tttgcaaatt cttacacctt ctctccaagc ggagggcaca ctgtggtcaa
540
aatcacttat tttattagga aaaagaggta actgttccaa agtgtagtgt cctttgttga
600
aggaggaggg atgtaagcat agatttgttc ttgtttctgg ctattctcag ctcaagccat
660
gtttaattca ttctttgtaa aagccttcaa ttg
693

<210> 4342
<211> 103
<212> PRT
<213> Homo sapiens

<400> 4342
Met Val Arg Leu Leu Lys Arg Lys Val Gln His Lys Asp Pro Pro Glu
 1   5   10   15
Arg Gly Gln Ser Ser Arg Gly Trp Asn Ala Ser Leu Gly Leu Gly Glu
                20   25   30
Lys Glu Gly Leu Val Ser Val Gly Ile Thr Gln Lys Arg Ala Leu Tyr
            35   40   45
Met Phe Ser Tyr Lys Tyr Ser Val Met Glu Lys His Ser Leu Asp Ala
        50   55   60
Tyr Gly Ser Leu Arg Ser Phe Phe Phe His Pro Leu Phe Leu Glu Lys
65   70   75   80
Lys Phe Phe Lys Ala Tyr Asn Leu Lys Ser Thr Ser Thr Tyr Ser Arg
                85   90   95
Asn Ile Val Ala Phe Ser Ile
                100

<210> 4343
<211> 499
<212> DNA
<213> Homo sapiens

<400> 4343

```
caattggaag gccgcgcctc aggaaaacag gatggtagtt gaatggcacc gagccgcccc
60
aggctgccgc cgtcacctcc tcagcggctc cgagtcgtgc gaggcagggg acccttttgcc
120
ttcagaacag ggcgcccgac gttgggcgcg tggacagagt cctccggcgg ccgcgccgct
180
gggccaggcg gagagaggcg gacggacttc aggggaggcc cgggccacgc cgcggaaact
240
acccgactcc ctggaggcgg ccaggaccga ccctgtcccg acaaaatgga gttccccgtg
300
tggcttcagc tcgcggcgcg ttcccagagc tcctcagtga tccggctttc ggattgttcg
360
cctttcatct catttgccgt tgtccaaatt ctaatttaaa actcatgtgt tacttgctgt
420
aaggttaaca aacgtacacc gcaaactgga taaagggata actttttatgt tgtgtatgtt
480
ttaccacaat aaaaataaa
499
```

```
<210> 4344
<211> 118
<212> PRT
<213> Homo sapiens
```

```
<400> 4344
Met Ala Pro Ser Arg Pro Arg Leu Pro Pro Ser Pro Pro Gln Arg Leu
1               5                   10                  15
Arg Val Val Arg Gly Arg Gly Pro Phe Ala Phe Arg Thr Gly Arg Pro
            20                  25                  30
Thr Leu Gly Ala Trp Thr Glu Ser Ser Gly Gly Arg Ala Ala Gly Pro
        35                  40                  45
Gly Gly Glu Arg Arg Thr Asp Phe Arg Gly Gly Pro Gly His Ala Ala
    50                  55                  60
Glu Thr Thr Arg Leu Pro Gly Gly Gly Gln Asp Arg Pro Cys Pro Asp
65                  70                  75                  80
Lys Met Glu Phe Pro Val Trp Leu Gln Leu Ala Ala Arg Ser Gln Ser
                85                  90                  95
Ser Ser Val Ile Arg Leu Ser Asp Cys Ser Pro Phe Ile Ser Phe Ala
            100                 105                 110
Val Val Gln Ile Leu Ile
        115
```

```
<210> 4345
<211> 349
<212> DNA
<213> Homo sapiens
```

```
<400> 4345
gcgtctatcc cagactaccg gggccctaat ggagtgtgga cactgcttca gaaagggaga
60
agcgttagtg ctgccgacnc tgagcgagcc gagccaaccc tcacccacat gagcatcacc
120
cgtctgcatg agcagaagct ggtgcagcat gtggtgtctc agaactgtga cgggctccac
180
```

ctgaggagtg ggctgncgcg cacggccatc tccgagctcc acgggaacat gtacattgaa
240
ggagtacgtg cgggtgttcg atgtgacgga gcgcactgcc ctccacagac accagacagg
300
ccggacctgc cacaagtgtg ggacccagct gcgggacacc attgtgcac
349

<210> 4346
<211> 116
<212> PRT
<213> Homo sapiens

<400> 4346
Ala Ser Ile Pro Asp Tyr Arg Gly Pro Asn Gly Val Trp Thr Leu Leu
 1   5   10   15
Gln Lys Gly Arg Ser Val Ser Ala Ala Asp Xaa Glu Arg Ala Glu Pro
            20   25   30
Thr Leu Thr His Met Ser Ile Thr Arg Leu His Glu Gln Lys Leu Val
        35   40   45
Gln His Val Val Ser Gln Asn Cys Asp Gly Leu His Leu Arg Ser Gly
    50   55   60
Leu Xaa Arg Thr Ala Ile Ser Glu Leu His Gly Asn Met Tyr Ile Glu
65   70   75   80
Gly Val Arg Ala Gly Val Arg Cys Asp Gly Ala His Cys Pro Pro Gln
                85   90   95
Thr Pro Asp Arg Pro Asp Leu Pro Gln Val Trp Asp Pro Ala Ala Gly
            100   105   110
His His Cys Ala
        115

<210> 4347
<211> 353
<212> DNA
<213> Homo sapiens

<400> 4347
gcgcgcctgc ccgctctcgc aacaccggcc acacggcgac gcgccgcagg ggcggacagg
60
gcactaggag gaggcgattc aggctgagac tcctccggga tctcgacgcc ccgaccgccg
120
ccccgggggct cgcgcgcagc gggtccagct gcacaaagcc gtccgctccg tcccgccgag
180
gccaggcagt gcagaggcag gagccgccgt cgggtagcga gatcttcact gccgagccca
240
agcgcgcgcc cagggcgtgg agggcggccg ggcccaggcg gcagcgctgg gtgccccggt
300
ctctagcgtc taagggtagc agctttaaga gcggcccttc agggaaggga tcc
353

<210> 4348
<211> 72
<212> PRT
<213> Homo sapiens

```
<400> 4348
Asp Ser Ser Gly Ile Ser Thr Pro Arg Pro Pro Pro Arg Gly Ser Arg
 1               5                  10                  15
Ala Ala Gly Pro Ala Ala Gln Ser Arg Pro Leu Arg Pro Ala Glu Ala
            20                  25                  30
Arg Gln Cys Arg Gly Arg Ser Arg Arg Val Ala Arg Ser Ser Leu
            35                  40                  45
Pro Ser Pro Ser Ala Arg Pro Gly Arg Gly Gly Arg Pro Gly Pro Gly
    50                  55                  60
Gly Ser Ala Gly Cys Pro Gly Leu
65                  70


<210> 4349
<211> 2040
<212> DNA
<213> Homo sapiens


<400> 4349
nttttttttt ttttgagata taaaaatctg tatttatatt acaatgacat aaggacacag
60
cacggcccac acggtggaca ggtggccggg ggcccctttc cccctctagc gcacgccccc
120
ctcaccggca ccaggccctc gtgtggcccc cgactctggc acggaacctg ccctagtgcc
180
caacatggac ctggggccac cctgctggcc gagggtcagg gtcctctgtg caggcagtgg
240
ggagggggtc ccaggttccc tgacagaggg aggcagggca cggggggagcc tgcctcaccc
300
agcggacagc acgggccggg gcagacagag caggaccct agggccacag accggtacag
360
ggttccacca cccggggaca caggcccaag caccgtgcca ctaagatggg gtctgcagag
420
gcaaagcctt gctgcagcct ctcccactct gcgaggatgg cggggggtctg ctatgtggtt
480
tgcggggggtt atcctggtat gcgggagctg ccttccaata aggctgggga acccaagcct
540
gagtctgggt gctcagtggc cgagagcact ggtgtgggct gggagggcac acgcagaggc
600
tcaggagccc cgggctctgt tctgcttctg tctgctctct atagacacgg tgatggcctc
660
ttggtccctg cagcctccag tgatggcagc ctgggcccct gacagggagc agtgggaggt
720
tggagcatgt ggtgactcct agcacgggcc cccacccagt gggcaacccc tcacccacct
780
gctgatggca gggagggggca gctgaacagc accccgggtg gctgagactg cctcccagtc
840
cacgtgggaa ccacggcctc aagagccaca ggctgagctg ccgggagggt gggctgaggg
900
gccaccactg gtcaccgggt ggattctgct ggtcagagat gagagcagaa gcccctagct
960
gcctcaggca ctggagggtg gggcagggag ctggtgcttc aagaattgag ggcagggaca
1020
cgaccacctc agggccctgc agtgctggct ggggaagcaa gctttttacac acggcccgcc
1080
```

```
ttgctcggag gtgccacggt gtttgaaatg aagcctgggg ggacagactc aggcaggcag
1140
gggaagctcc tttctgggca cccctggacc ccagtggggc cggaaggaga tgcagacagg
1200
cctcctcaca accacccgca acgcgttcgg atgcccctca gctccaggca ccatgccccc
1260
tacagcctgc agggcaggtt ctgtgccaga gttgtttcca gggacccccct tccgccacag
1320
tgggcccccc atcctggggc gtctatgcgt acgactgaaa atagacacga attttccccca
1380
tgatatggga attggctaca gatgtaccag aggcacggca ggcactgcta tgggccagcc
1440
ccaaggacag aggacgtcag gaaggaaagg cgggtgcaag cctcctggtg ccaggcctgc
1500
accacccagc gagcacagtc ttcattggct gccagtgtct gaaacctgga accctcgcct
1560
aggccaggaa gcagggggct cgagtcaggt gacaggtgag aatccatctc tctagtgagc
1620
aagcaggccc ctgccagcca ctggggaggg caacactggg gaccaggtca cagcccctcc
1680
gtgccaccca caggggcctg gctgcatcgc ctccaggaag ccctggctgc cgggagggggc
1740
tgcccacagg agatgggagg acagcactag ctgggcaggc ctggggcacc ctgagccacg
1800
agggacatgc tggtgggaag ggcaaggcct gacacaagac acaaggcaca ctttgacgac
1860
gtgacggagg acaggtccc tgagacgctg ggtggctccc accccctcagc aaacaaggac
1920
gcaacaacag ctaggaaaat agaatacaaa aatctggtac aggaaacaga ggcggcacag
1980
aacctgccct gcaggctgta ggggggcatgg tgcctggagc tgaggggcat ccgaacgcgt
2040
```

```
<210> 4350
<211> 113
<212> PRT
<213> Homo sapiens
```

```
<400> 4350
Xaa Phe Phe Phe Leu Arg Tyr Lys Asn Leu Tyr Leu Tyr Tyr Asn Asp
1               5                   10                  15
Ile Arg Thr Gln His Gly Pro His Gly Gly Gln Val Ala Gly Gly Pro
            20                  25                  30
Phe Pro Pro Leu Ala His Ala Pro Leu Thr Gly Thr Arg Pro Ser Cys
        35                  40                  45
Gly Pro Arg Leu Trp His Gly Thr Cys Pro Ser Ala Gln His Gly Pro
    50                  55                  60
Gly Ala Thr Leu Leu Ala Glu Gly Gln Gly Pro Leu Cys Arg Gln Trp
65                  70                  75                  80
Gly Gly Gly Pro Arg Phe Pro Asp Arg Gly Arg Gln Gly Thr Gly Glu
                85                  90                  95
Pro Ala Ser Pro Ser Gly Gln His Gly Pro Gly Gln Thr Glu Gln Gly
            100                 105                 110
Pro
```

<210> 4351
<211> 4703
<212> DNA
<213> Homo sapiens

<400> 4351
nntttttttt tttttttttt tttttaaaga aataaattta ctttaatggt actttcaaaa
60
agactaatcc ataacaaatt aagttatact gtatttcctt tgctacccag aaccacaggg
120
ctggttgtca acacatattg aagaaatgta agcaaaatac agaaagtgat gattttcaaa
180
aggaagagaa gaaactcctt ttcaacaaac actttatatc atttattaat gcagtataca
240
ttagatctaa aatctgcagt ttctaagcac accatgttta gatctttcag atccttctgc
300
agttttaggt tatttctaca gaggtacctt taagtgaatg aataccacat tctgtaattc
360
ctgaaaatat agtacagagt gaaatgattt aaatataatt taggcacata ttgattatga
420
aaatagatta tctctcaata caatacttct ctgtcttggt aaaaataata aagcaaagaa
480
aataattcat ttctgaagtt gctttccttc acttgtaaag gtctgatctc ctcccactat
540
gcatatgtac cctttactgt taaggaaagc tttgcatatg tagatataga agaataagct
600
acgtaaatac taaagatatg tcattctccc aaaggagaca caggtggttt tcaatgattc
660
cttgcctcat gttgatgagt ctgtagaatt cagaacccat ttggacacag ctaatatccc
720
tgctcttggg gtagaaaata aggacaccaa gtcattggta gggaggtaca ggcccttcct
780
ctgctgctgc agagagagaa tgactcaaga aaattgggct aaaatttgtt taaaaaaaaa
840
aaaccacaaa aaaataagta aagaatcac aggtgctgac tgattgataa ttacatcttg
900
gaccagccaa atgcctttat ttttacgtct atttttttgg tggctgtaat caaatgtgtg
960
tttaaaattc ctcattcccc actgtagggt tctagctgca attatattac attgcctttt
1020
agcaggcaac tctaccatat tcactcatat aagctttgat tgcagtagct ctggatttag
1080
tatctatttc taagctggcc ctatgtaaac tatttggtat ttgaattaaa tgaatattaa
1140
tgatgcacct tggttttttt ggttttgaag tatcttccta tgcttgtgct gactgtatga
1200
gaaaactagg ctaatagtgt aaatagatag aattgcttga tctggtgttg agtggaactt
1260
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3543

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4703

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<211> 86
<212> PRT
<213> Homo sapiens

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                20   25   30
Leu Gln Pro Pro Pro Pro Gly Phe Glu Leu Phe Ser Cys Leu Ser Phe
            35   40   45
Gln Ser Ser Trp Gly Tyr Arg His Ser Pro Pro Arg Leu Ala Asn Phe
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Ser Ile Phe Ser Arg Asp Gly Val Ser Pro Cys Trp Pro Gly Trp Ser
65   70   75   80
Gln Thr Pro Asn Leu Lys
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<212> DNA
<213> Homo sapiens

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3545

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2340

3546

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<211> 586
<212> PRT
<213> Homo sapiens

<400> 4354
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            20   25   30
Trp Arg Lys Lys Lys Glu Leu Glu Glu Gln Arg Lys Leu Gly Asn Ala
            35   40   45
Pro Ala Glu Val Asp Glu Glu Gly Lys Asp Ile Asn Pro His Ile Pro
        50   55   60
Gln Tyr Ile Ser Ser Val Pro Trp Tyr Ile Asp Pro Ser Lys Arg Pro
65   70   75   80
Thr Leu Lys His Gln Arg Pro Gln Pro Glu Lys Gln Lys Gln Phe Ser
                85   90   95
Ser Ser Gly Glu Trp Tyr Lys Arg Gly Val Lys Glu Asn Ser Ile Ile
            100   105   110
Thr Lys Tyr Arg Lys Gly Ala Cys Glu Asn Cys Gly Ala Met Thr His
            115   120   125
Lys Lys Lys Asp Cys Phe Glu Arg Pro Arg Arg Val Gly Ala Lys Phe
        130   135   140
Thr Gly Thr Asn Ile Ala Pro Asp Glu His Val Gln Pro Gln Leu Met
145   150   155   160
Phe Asp Tyr Asp Gly Lys Arg Asp Arg Trp Asn Gly Tyr Asn Pro Glu
                165   170   175
Glu His Met Lys Ile Val Glu Glu Tyr Ala Lys Val Asp Leu Ala Lys
            180   185   190
Arg Thr Leu Lys Ala Gln Lys Leu Gln Glu Glu Leu Ala Ser Gly Lys
            195   200   205
Leu Val Glu Gln Ala Asn Ser Pro Lys His Gln Trp Gly Glu Glu Glu
        210   215   220
Pro Asn Ser Gln Thr Glu Lys Asp His Asn Ser Glu Asp Glu Asp Glu
225   230   235   240
Asp Lys Tyr Ala Asp Asp Ile Asp Met Pro Gly Gln Asn Phe Asp Ser
                245   250   255
Lys Arg Arg Ile Thr Val Arg Asn Leu Arg Ile Arg Glu Asp Ile Ala
            260   265   270
Lys Tyr Leu Arg Asn Leu Asp Pro Asn Ser Ala Tyr Tyr Asp Pro Lys
            275   280   285
Thr Arg Ala Met Arg Glu Asn Pro Tyr Ala Asn Ala Gly Lys Asn Pro
        290   295   300
Asp Glu Val Ser Tyr Ala Gly Asp Asn Phe Val Arg Tyr Thr Gly Asp
305   310   315   320
Thr Ile Ser Met Ala Gln Thr Gln Leu Phe Ala Trp Glu Ala Tyr Asp

3547

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Lys Gly Ser Glu Val His Leu Gln Ala Asp Pro Thr Lys Leu Glu Leu
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Leu Tyr Lys Ser Phe Lys Val Lys Lys Glu Asp Phe Lys Glu Gln Gln
            355                    360             365
Lys Glu Ser Ile Leu Glu Lys Tyr Gly Gly Gln Glu His Leu Asp Ala
        370                    375             380
Pro Pro Ala Glu Leu Leu Leu Ala Gln Thr Glu Asp Tyr Val Glu Tyr
385                    390                    395                    400
Ser Arg His Gly Thr Val Ile Lys Gly Gln Glu Arg Ala Val Ala Cys
                405                    410                    415
Ser Lys Tyr Glu Glu Asp Val Lys Ile His Asn His Thr His Ile Trp
                420                    425                    430
Gly Ser Tyr Trp Lys Glu Gly Arg Trp Gly Tyr Lys Cys Cys His Ser
                435                    440                    445
Phe Phe Lys Tyr Ser Tyr Cys Thr Gly Glu Ala Gly Lys Glu Ile Val
            450                    455             460
Asn Ser Glu Glu Cys Ile Ile Asn Glu Ile Thr Gly Glu Glu Ser Val
465                    470                    475                    480
Lys Lys Pro Gln Thr Leu Met Glu Leu His Gln Glu Lys Leu Lys Glu
                485                    490                    495
Glu Lys Lys Lys Lys Lys Lys Lys Lys Lys His Arg Lys Ser Ser
                500                    505             510
Ser Asp Ser Asp Asp Glu Glu Lys Lys His Glu Lys Leu Lys Lys Ala
                515                    520             525
Leu Asn Ala Glu Glu Ala Arg Leu Leu His Val Lys Glu Thr Met Gln
            530                    535             540
Ile Asp Glu Arg Lys Arg Pro Tyr Asn Ser Met Tyr Glu Thr Arg Glu
545                    550                    555                    560
Pro Thr Glu Glu Glu Met Glu Ala Tyr Arg Met Lys Arg Gln Arg Pro
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Asp Asp Pro Met Ala Ser Phe Leu Gly Gln
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<210> 4355
<211> 1741
<212> DNA
<213> Homo sapiens

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180
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240
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300
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360
tatgaaatag atactggaga agaaacaaaa tttgttaacc cagaagatgt tgccagactg
420
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<210> 4356
<211> 509
<212> PRT
<213> Homo sapiens

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              20                      25                    30
Arg Val Thr Pro Ala Val Val Ala Tyr Ser Glu Asn Glu Glu Ile Val
          35                      40                    45
Gly Leu Ala Ala Lys Gln Ser Arg Ile Arg Asn Ile Ser Asn Thr Val
          50                      55                    60
Met Lys Val Lys Gln Ile Leu Gly Arg Ser Ser Ser Asp Pro Gln Ala
65                      70                    75                    80
Gln Lys Tyr Ile Ala Glu Ser Lys Cys Leu Val Ile Glu Lys Asn Gly
              85                      90                    95
Lys Leu Arg Tyr Glu Ile Asp Thr Gly Glu Glu Thr Lys Phe Val Asn
              100                     105                   110
Pro Glu Asp Val Ala Arg Leu Ile Phe Ser Lys Met Lys Glu Thr Ala
          115                     120                   125
His Ser Val Leu Gly Ser Asp Ala Asn Asp Val Val Ile Thr Val Pro
          130                     135                   140
Phe Asp Phe Gly Glu Lys Gln Lys Asn Ala Leu Gly Glu Ala Ala Arg
145                     150                     155                   160
Ala Ala Gly Phe Asn Val Leu Arg Leu Ile His Glu Pro Ser Ala Ala
              165                     170                   175
Leu Leu Ala Tyr Gly Ile Gly Gln Asp Ser Pro Thr Gly Lys Ser Asn
              180                     185                   190
Ile Leu Val Phe Lys Leu Gly Gly Thr Ser Leu Ser Leu Ser Val Met
          195                     200                   205
Glu Val Asn Ser Gly Ile Tyr Arg Val Leu Ser Thr Asn Thr Asp Asp
          210                     215                   220
Asn Ile Gly Gly Ala His Phe Thr Glu Thr Leu Ala Gln Tyr Leu Ala
225                     230                     235                   240
Ser Glu Phe Gln Arg Ser Phe Lys His Asp Val Arg Gly Asn Ala Arg
              245                     250            .        255
Ala Met Met Lys Leu Thr Asn Ser Ala Glu Val Ala Lys His Ser Leu
              260                     265                   270
Ser Thr Leu Gly Ser Ala Asn Cys Phe Leu Asp Ser Leu Tyr Glu Gly
              275                     280                   285
Gln Asp Phe Asp Cys Asn Val Ser Arg Ala Arg Phe Glu Leu Leu Cys
          290                     295                   300
Ser Pro Leu Phe Asn Lys Cys Ile Glu Ala Ile Arg Gly Leu Leu Asp
305                     310                     315                   320
Gln Asn Gly Phe Thr Ala Asp Asp Ile Asn Lys Val Val Leu Cys Gly
              325                     330                   335
Gly Ser Ser Arg Ile Pro Lys Leu Gln Gln Leu Ile Lys Asp Leu Phe
              340                     345                   350
Pro Ala Val Glu Leu Leu Asn Ser Ile Pro Pro Asp Glu Val Ile Pro
          355                     360                   365
Ile Gly Ala Ala Ile Glu Ala Gly Ile Leu Ile Gly Lys Glu Asn Leu
          370                     375                   380
Leu Val Glu Asp Ser Leu Met Ile Glu Cys Ser Ala Arg Asp Ile Leu
385                     390                     395                   400
Val Lys Gly Val Asp Glu Ser Gly Ala Ser Arg Phe Thr Val Leu Phe
              405                     410                   415
Pro Ser Gly Thr Pro Leu Pro Ala Arg Arg Gln His Thr Leu Gln Ala
              420                     425                   430
Pro Gly Ser Ile Ser Ser Val Cys Leu Glu Leu Tyr Glu Ser Asp Gly
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                435                  440                   445
Lys Asn Ser Ala Lys Glu Glu Thr Lys Phe Ala Gln Val Val Leu Gln
        450                  455                   460
Asp Leu Asp Lys Lys Glu Asn Gly Leu Arg Asp Ile Leu Ala Val Leu
465                  470                   475                   480
Thr Met Lys Arg Asp Gly Ser Leu His Val Thr Cys Thr Asp Gln Glu
                485                   490                   495
Thr Gly Lys Cys Glu Ala Ile Ser Ile Glu Ile Ala Ser
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<210> 4357
<211> 421
<212> DNA
<213> Homo sapiens

<400> 4357
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300
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421
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<211> 115
<212> PRT
<213> Homo sapiens

<400> 4358
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Thr Cys Val Gln Leu Cys His Phe His Ser Ala Leu Leu His Arg Arg
            20                  25                  30
Gln Lys Pro Trp Pro Ser Pro Ala Val Phe Phe Arg Arg Asn Val Arg
        35                  40                  45
Gly Leu Pro Pro Arg Phe Ser Ser Pro Thr Pro Leu Trp Arg Lys Val
    50                  55                  60
Leu Ser Thr Ala Val Val Gly Ala Pro Leu Leu Leu Gly Ala Arg Tyr
65                  70                  75                  80
Val Met Ala Glu Ala Arg Glu Lys Arg Arg Met Arg Leu Val Val Asp
                85                  90                  95
Gly Met Gly Arg Phe Cys Arg Ser Leu Lys Val Gly Leu Gln Ile Ser
            100                 105                 110
Leu Asp Tyr
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115

<210> 4359
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<212> DNA
<213> Homo sapiens

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180
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720
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780
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cagctagaga agagcctgga gctcaagttt gacgtcctgg acgaaaacca gagcaagctc
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1200
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1380

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acctacaagt gtcagaagac actggagggc catgatggca tcgtgctggc tctctgcatc
1440
caggggtgca aactctacag cggctctgca gactgcacca tcattgtgtg ggacatccag
1500
aacctgcaga aggtgaacac catccgggcc catgacaacc cggtgtgcac gctggtctcc
1560
tcacacaacg tgctcttcag cggctccctg aaggccatca aggtctggga catcgtgggc
1620
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1680
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1740
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1800
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tccaaggagc aggtgcggac cctcacgggc cacgtgggca ccgtgtatgc cctggcggtc
1920
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1980
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2040
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2100
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2160
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2460
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2520
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2580
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2700
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2760
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2820
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2880
cctgcacgcc gggacgccac ctccgccagc cgcctccacc cgccccacac cacaatcgct
2940
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3000
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ggatcagcaa acacgataga ggagaccagt cagtacttct tggagggggc aggaggagag
3060
aggaaaaggg agggcgagaa tgaccacaca acacagcctt ggaccatgag cagaagcgtc
3120
cgtgggaact ccactggggt ggatgggctg cctgcacagc ccctggagag ggggccaggc
3180
acaccctcag aggagctgca agcccgtggc ctggcctgct acatgccctg cttccacgtg
3240
gctgccacgc tgacacaccc acattcacca aacccacccg cgccctggga cgcagccacg
3300
ccaggaggag gacacggccg ccgagagcaa ggcacaacct cgagttcttg gggcgcagag
3360
aacttaggag agaagcacgg aggagccccc ggcagagcac ccgcccccgg ccccagcct
3420
tccacctgtg ctagcagcct ggggcctcca ctctggccgg aggaaggacc gcaggcagac
3480
agcctgggcc tctaacagct tttgtccgga gctagacttc gtgtcctttc agttggtaaa
3540
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3660
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3661

<210> 4360
<211> 670
<212> PRT
<213> Homo sapiens

<400> 4360
Met Ser Ser Gly Lys Ser Ala Arg Tyr Asn Arg Phe Ser Gly Gly Pro
1   5   10   15
Ser Asn Leu Pro Thr Pro Asp Val Thr Thr Gly Thr Arg Met Glu Thr
            20   25   30
Thr Phe Gly Pro Ala Phe Ser Ala Val Thr Thr Ile Thr Lys Ala Asp
        35   40   45
Gly Thr Ser Thr Tyr Lys Gln His Cys Arg Thr Pro Ser Ser Ser Ser
    50   55   60
Thr Leu Ala Tyr Ser Pro Arg Asp Glu Glu Asp Ser Met Pro Pro Ile
65   70   75   80
Ser Thr Pro Arg Arg Ser Asp Ser Ala Ile Ser Val Arg Ser Leu His
                85   90   95
Ser Glu Ser Ser Met Ser Leu Arg Ser Thr Phe Ser Leu Pro Glu Glu
            100   105   110
Glu Glu Glu Pro Glu Pro Leu Val Phe Ala Glu Gln Pro Ser Val Lys
        115   120   125
Leu Cys Cys Gln Leu Cys Cys Ser Val Phe Lys Asp Pro Val Ile Thr
    130   135   140
Thr Cys Gly His Thr Phe Cys Arg Arg Cys Ala Leu Lys Ser Glu Lys
145   150   155   160
Cys Pro Val Asp Asn Val Lys Leu Thr Val Val Asn Asn Ile Ala
                165   170   175
Val Ala Glu Gln Ile Gly Glu Leu Phe Ile His Cys Arg His Gly Cys

3554

```
                 180                    185                    190
Arg Val Ala Gly Ser Gly Lys Pro Pro Ile Phe Glu Val Asp Pro Arg
         195                    200                    205
Gly Cys Pro Phe Thr Ile Lys Leu Ser Ala Arg Lys Asp His Glu Gly
     210                    215                    220
Ser Cys Asp Tyr Arg Pro Val Arg Cys Pro Asn Asn Pro Ser Cys Pro
225                    230                    235                    240
Pro Leu Leu Arg Met Asn Leu Glu Ala His Leu Lys Glu Cys Glu His
                 245                    250                    255
Ile Lys Cys Pro His Ser Lys Tyr Gly Cys Thr Phe Ile Gly Asn Gln
             260                    265                    270
Asp Thr Tyr Glu Thr His Leu Glu Thr Cys Arg Phe Glu Gly Leu Lys
         275                    280                    285
Glu Phe Leu Gln Gln Thr Asp Asp Arg Phe His Glu Met His Val Ala
     290                    295                    300
Leu Ala Gln Lys Asp Gln Glu Ile Ala Phe Leu Arg Ser Met Leu Gly
305                    310                    315                    320
Lys Leu Ser Glu Lys Ile Asp Gln Leu Glu Lys Ser Leu Glu Leu Lys
                 325                    330                    335
Phe Asp Val Leu Asp Glu Asn Gln Ser Lys Leu Ser Glu Asp Leu Met
             340                    345                    350
Glu Phe Arg Arg Asp Ala Ser Met Leu Asn Asp Glu Leu Ser His Ile
         355                    360                    365
Asn Ala Arg Leu Asn Met Gly Ile Leu Gly Ser Tyr Asp Pro Gln Gln
     370                    375                    380
Ile Phe Lys Cys Lys Gly Thr Phe Val Gly His Gln Gly Pro Val Trp
385                    390                    395                    400
Cys Leu Cys Val Tyr Ser Met Gly Asp Leu Leu Phe Ser Gly Ser Ser
                 405                    410                    415
Asp Lys Thr Ile Lys Val Trp Asp Thr Cys Thr Thr Tyr Lys Cys Gln
             420                    425                    430
Lys Thr Leu Glu Gly His Asp Gly Ile Val Leu Ala Leu Cys Ile Gln
         435                    440                    445
Gly Cys Lys Leu Tyr Ser Gly Ser Ala Asp Cys Thr Ile Ile Val Trp
     450                    455                    460
Asp Ile Gln Asn Leu Gln Lys Val Asn Thr Ile Arg Ala His Asp Asn
465                    470                    475                    480
Pro Val Cys Thr Leu Val Ser Ser His Asn Val Leu Phe Ser Gly Ser
                 485                    490                    495
Leu Lys Ala Ile Lys Val Trp Asp Ile Val Gly Thr Glu Leu Lys Leu
             500                    505                    510
Lys Lys Glu Leu Thr Gly Leu Asn His Trp Val Arg Ala Leu Val Ala
         515                    520                    525
Ala Gln Ser Tyr Leu Tyr Ser Gly Ser Tyr Gln Thr Ile Lys Ile Trp
     530                    535                    540
Asp Ile Arg Thr Leu Asp Cys Ile His Val Leu Gln Thr Ser Gly Gly
545                    550                    555                    560
Ser Val Tyr Ser Ile Ala Val Thr Asn His His Ile Val Cys Gly Thr
                 565                    570                    575
Tyr Glu Asn Leu Ile His Val Trp Asp Ile Glu Ser Lys Glu Gln Val
             580                    585                    590
Arg Thr Leu Thr Gly His Val Gly Thr Val Tyr Ala Leu Ala Val Ile
         595                    600                    605
Ser Thr Pro Asp Gln Thr Lys Val Phe Ser Ala Ser Tyr Asp Arg Ser
```

```
              610                    615                    620
Leu Arg Val Trp Ser Met Asp Asn Met Ile Cys Thr Gln Thr Leu Leu
625                    630                    635                    640
Arg His Gln Gly Ser Val Thr Ala Leu Ala Val Ser Arg Gly Arg Leu
                  645                    650                    655
Phe Ser Gly Ala Val Asp Ser Thr Val Lys Val Trp Thr Cys
              660                    665                    670


<210> 4361
<211> 574
<212> DNA
<213> Homo sapiens


<400> 4361
nggatccaga acccattgct atcaggctgt acagccttca atcacaacgg gaacctgctg
60
gtcacagggg cagctgatgg cgtcatccgg ctgtttgaca tgcagcagca tgagtgcgcg
120
atgagctgga gggcccacta cggggaggtc tactctgtgg agttcagcta tgatgagaac
180
accgtgtaca gcatcggcga ggacgggaag gtaggcggct ccaggattca gataagagag
240
caccgggatg acatgtgggc cggctgcagg ttgtggccat acctgttact agctctgcaa
300
cctggggcct cttttttgcag ctttgttatc tgtagaatag ggataaacta gtaattcgtc
360
ttacaatcct tgcgaggttt tagtgaattc agtgggagtt ggctatcctt atgaaaggaa
420
gtaccaaaaa ttactcatct taccatagat gtatctgtgg ggtctggatt tagggctgag
480
tttgctttgc tgggcttggt agtgagtggt cccaggacca ctcatggatg tgtagtttgc
540
tgagtggctg gggacagctt cttacatgtg taca
574


<210> 4362
<211> 116
<212> PRT
<213> Homo sapiens


<400> 4362
Xaa Ile Gln Asn Pro Leu Leu Ser Gly Cys Thr Ala Phe Asn His Asn
 1               5                   10                  15
Gly Asn Leu Leu Val Thr Gly Ala Ala Asp Gly Val Ile Arg Leu Phe
              20                  25                  30
Asp Met Gln Gln His Glu Cys Ala Met Ser Trp Arg Ala His Tyr Gly
          35                  40                  45
Glu Val Tyr Ser Val Glu Phe Ser Tyr Asp Glu Asn Thr Val Tyr Ser
      50                  55                  60
Ile Gly Glu Asp Gly Lys Val Gly Gly Ser Arg Ile Gln Ile Arg Glu
65                  70                  75                  80
His Arg Asp Asp Met Trp Ala Gly Cys Arg Leu Trp Pro Tyr Leu Leu
              85                  90                  95
Leu Ala Leu Gln Pro Gly Ala Ser Phe Cys Ser Phe Val Ile Cys Arg
```

```
          100              105                110
Ile Gly Ile Asn
        115


<210> 4363
<211> 1222
<212> DNA
<213> Homo sapiens


<400> 4363
tttttttttt tttttttttt tttttttttt tttttttttt tttttgagat ttcccaggac
60
tggctttaat ttgaaaaatc tgattggggt ctcttcccgt atcagagaag gaacagccca
120
agctatgacc ccagggccag ggaattcagt ccccaccaga ccctgtcatt ccatcactag
180
ggggtaattc caggctcccc ctgccagccc tgagacagga ggacggatgt gaagttgccc
240
aggactagat tctgtctctc caaagtggcc caagccctgt tctctgtact agggaagcca
300
gctgtgtctt ttcgaggaca gttggtccag ccagcaggct cagttcagat accagacaac
360
cattccagca cgagggctca gcgccctggc cccggcggtc gctccagtgc ctgtgtgccc
420
accagcacat ccatgaggta gtccaattcg gcctcgtcca gctccggagc ttcctccttg
480
cccggcccat cctcagggcc tggtttgagg ccctcagagg ctggtgccca aagttcattg
540
tcatacatag aggtgtcaat atcctcaaac aggccctcga gcccatcgtc cagtagacag
600
ccagtggctg ggcccagcag gtccaaggca cccaggctgg gcgctgctcc cccgatgcta
660
cggcctggtg gcccctcgtc tgccaagggt tggggagcct gactcaggcc ctcaatgtgg
720
ctgaggtcct ccaggaggct ggccatggag gctgaaaggg cagcgtccga gcttgccagt
780
aagttgtcag ccacactggg ggctgcaggt gggctaggca caggtggcag ggcagccgcg
840
ggtgccatgg acgccnntgg atgcgccgca gagtgttcac gaccagcacc aggtgccgca
900
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960
gagctagagg ccacggccgg gggtgcctgt gccaccgctg cgtggccagg atctagccac
1020
caggagtcga ctgccagagg ttccttctcc tcctcctcct cccgtttccg cttcagaccc
1080
ttgctcagca tcttgctcac tagcggccaa tcagaacgaa gaggtagcca cccacaacca
1140
atcaggaaac ggcggcggca gcatcgcttg ttggctgtcc tccggaaacc cgcgcctggg
1200
tcgcgagacg cagttctagc ga
1222


<210> 4364
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<211> 75
<212> PRT
<213> Homo sapiens

<400> 4364
Asp Arg Arg Thr Asp Val Lys Leu Pro Arg Thr Arg Phe Cys Leu Ser
 1               5                   10                  15
Lys Val Ala Gln Ala Leu Phe Ser Val Leu Gly Lys Pro Ala Val Ser
            20                  25                  30
Phe Arg Gly Gln Leu Val Gln Pro Ala Gly Ser Val Gln Ile Pro Asp
            35                  40                  45
Asn His Ser Ser Thr Arg Ala Gln Arg Pro Gly Pro Gly Gly Arg Ser
        50                  55                  60
Ser Ala Cys Val Pro Thr Ser Thr Ser Met Arg
65                  70                  75


<210> 4365
<211> 469
<212> DNA
<213> Homo sapiens

<400> 4365
gacgtgctcg atggcaaggt cgcaccgggc aagaacgtgc cggtctacga caccatctgc
60
gagttcaccg gcatgtcggt cgccgacttc ctcgctgaca agggcagcca ggttgagatc
120
gtcaccgacg acatcaagcc gggtgtggcg attggcggta cgtcgttccc gacctactac
180
cgcagcatgt acccgaaaga agtgatcatg accggcgaca tgatgctgga aaaggtctat
240
cgcgagggcg acaagctggt ggcggtgctg gagaacgaat acaccggcgc caaggaagag
300
cgggtggtcg accaggtggt ggtggagaac ggtgtgcgtc cggatgagga aatctactac
360
gggctcaagg aaggttcgcg caacaagggc cagatcgatg tcgaagccct gttcgcgatc
420
aagccgcagc cttcgctgaa tactcttaat gaagaggcag cgggtgacg
469


<210> 4366
<211> 156
<212> PRT
<213> Homo sapiens

<400> 4366
Asp Val Leu Asp Gly Lys Val Ala Pro Gly Lys Asn Val Pro Val Tyr
 1               5                   10                  15
Asp Thr Ile Cys Glu Phe Thr Gly Met Ser Val Ala Asp Phe Leu Ala
            20                  25                  30
Asp Lys Gly Ser Gln Val Glu Ile Val Thr Asp Asp Ile Lys Pro Gly
            35                  40                  45
Val Ala Ile Gly Gly Thr Ser Phe Pro Thr Tyr Tyr Arg Ser Met Tyr
        50                  55                  60
Pro Lys Glu Val Ile Met Thr Gly Asp Met Met Leu Glu Lys Val Tyr
```

```
      65                    70                    75                    80
Arg Glu Gly Asp Lys Leu Val Ala Val Leu Glu Asn Glu Tyr Thr Gly
                     85                    90                    95
Ala Lys Glu Glu Arg Val Val Asp Gln Val Val Val Glu Asn Gly Val
             100                   105                   110
Arg Pro Asp Glu Glu Ile Tyr Tyr Gly Leu Lys Glu Gly Ser Arg Asn
         115                   120                   125
Lys Gly Gln Ile Asp Val Glu Ala Leu Phe Ala Ile Lys Pro Gln Pro
     130                   135                   140
Ser Leu Asn Thr Leu Asn Glu Glu Ala Ala Gly Asp
145                   150                   155
```

<210> 4367
<211> 852
<212> DNA
<213> Homo sapiens

<400> 4367
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nncctaggca gggggatggc cctgcgtgac tgcaccagaa ggaaggagct ggggccggct
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ggccttttgc aggtggaatt ccagaggcc cggatcttcg aggagaccct gaacatcctc
120
atctacgaga ctccccgggg cccagaccca gccctcctgg aggccacagg gggagcagct
180
ggagctggtg gggctggccg cggggaggat gaagagaacc gagagcaccg tgtccgcagg
240
atccatgtcc ggcgccatat cacccacgac gagcgtcctc atggccaaca aattgtcttc
300
aaggactgac ctctgaccct ccccctgcct tcctcttgcc ttgggaccca gtccctctct
360
ctttccctcc ccttcccaga cttttgcccc ggctctgctg gccaagtcgt gggtcctcct
420
ctgtcccttc attgcatggc acagctcact ttggcccttc tccacccgtc ccaaccccat
480
tgctaacaac atggtacatt ccggccccac cactcagagc cttccgaagc caacacttgt
540
ccccaccctg gccctgcgtc cttccctctc cagctggtta agagggattt agaattccct
600
ttctcttttt ttagtgcatc gtccatgcca aagtgtgcgg cccttcctga catcaccaca
660
gtctgagcag cctcccgcgt cctgcaggat agtccgcccc ctcctcccca ccatcctccc
720
tacctcctta actttgtact agactggcct gggcctgccc agctcagcgt tatcagtctg
780
tttcatatta tttattattt taattttcta ttaaattatt gaaataaagt taagttgaga
840
aactaaaaaa aa
852
```

<210> 4368
<211> 102
<212> PRT
<213> Homo sapiens

<400> 4368
Xaa Leu Gly Arg Gly Met Ala Leu Arg Asp Cys Thr Arg Arg Lys Glu
1   5   10   15
Leu Gly Pro Ala Gly Leu Leu Gln Val Glu Phe Pro Glu Ala Arg Ile
            20   25   30
Phe Glu Glu Thr Leu Asn Ile Leu Ile Tyr Glu Thr Pro Arg Gly Pro
        35   40   45
Asp Pro Ala Leu Leu Glu Ala Thr Gly Gly Ala Ala Gly Ala Gly Gly
    50   55   60
Ala Gly Arg Gly Glu Asp Glu Glu Asn Arg Glu His Arg Val Arg Arg
65   70   75   80
Ile His Val Arg Arg His Ile Thr His Asp Glu Arg Pro His Gly Gln
                85   90   95
Gln Ile Val Phe Lys Asp
                100

<210> 4369
<211> 1264
<212> DNA
<213> Homo sapiens

<400> 4369
gctcagctgg ccaaccctga aatccccctg ggcagtgcag agcagttcct cctcaccctg
60
tcctccatca gcgagctctc tgcacgactt cacctctggg cattcaaaat ggattatgaa
120
actacagaaa aggaagtagc agaaccactc ctggacctga ggaaggaat agaccagttg
180
gagaacaata aaaccttggg ctttatcctg tctactctct tagccattgg gaactttcta
240
aatggaacta atgccaaagc gtttgagtta agctacctcg agaaggttcc agaagtcaaa
300
gacacagtgc acaagcagtc gcttctccac catgtgtgca ccatggtggt agaaaacttc
360
ccagacagct ccgatctgta ctcggagatc ggggccatca ccaggtcagc caaggttgac
420
tttgatcaac ttcaggataa tttatgtcag atggagagaa gatgcaaagc ttcatgggat
480
cacctcaagg caattgcaaa acatgaaatg aaaccagttt taaaacaacg gatgtcagag
540
ttcctgaaag actgtgcaga gcgaattata attttaaaga ttgtccatag aaggataatc
600
aacagattcc actccttttt actctttatg ggccatccac cttatgcaat tcgggaagtg
660
aacataaaca aattctgcag gattattagt gaatttgcac tagagtatcg cacaaccagg
720
gaaagggttt tgcagcagaa acagaaacgg gccaaccaca gagagagaaa taagaccaga
780
gggaagatga tcaccgattc tggcaagttc tccggcagtt ctccggcgcc cccaagccag
840
ccgcagggtc tgagctatgc ggaggacgcg gctgagcacg agaacatgaa ggctgtgctg
900
aaaacctcgt ccccctccag gagtcccctg cacatacctt ctccatcgtg tcagctgtgt
960

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ttctcttgat tccgtgacac ccggtttatt agttcaaaag tgtgacacct tttctgggca
1020
aggaacagcc cctttaagga gcaaatcact tctgtcacag ttattatggt aatatgaggc
1080
aatctgatta gcttcacaga ctgagtctcc acaacaccaa aatatccaga tgtaaacccc
1140
aaacttgtac acaaagaaa gcacagattg tttacctgtt gtggatttta gatgtaacaa
1200
atgtttatac aaatacatac atgtacacca tgtttcaaat actaaataaa tagagtttaa
1260
tgcc
1264
```

```
<210> 4370
<211> 322
<212> PRT
<213> Homo sapiens
```

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<400> 4370
Ala Gln Leu Ala Asn Pro Glu Ile Pro Leu Gly Ser Ala Glu Gln Phe
1               5                   10                  15
Leu Leu Thr Leu Ser Ser Ile Ser Glu Leu Ser Ala Arg Leu His Leu
            20                  25                  30
Trp Ala Phe Lys Met Asp Tyr Glu Thr Thr Glu Lys Glu Val Ala Glu
        35                  40                  45
Pro Leu Leu Asp Leu Lys Glu Gly Ile Asp Gln Leu Glu Asn Asn Lys
    50                  55                  60
Thr Leu Gly Phe Ile Leu Ser Thr Leu Leu Ala Ile Gly Asn Phe Leu
65                  70                  75                  80
Asn Gly Thr Asn Ala Lys Ala Phe Glu Leu Ser Tyr Leu Glu Lys Val
                85                  90                  95
Pro Glu Val Lys Asp Thr Val His Lys Gln Ser Leu Leu His His Val
                100                 105                 110
Cys Thr Met Val Val Glu Asn Phe Pro Asp Ser Ser Asp Leu Tyr Ser
            115                 120                 125
Glu Ile Gly Ala Ile Thr Arg Ser Ala Lys Val Asp Phe Asp Gln Leu
    130                 135                 140
Gln Asp Asn Leu Cys Gln Met Glu Arg Arg Cys Lys Ala Ser Trp Asp
145                 150                 155                 160
His Leu Lys Ala Ile Ala Lys His Glu Met Lys Pro Val Leu Lys Gln
                165                 170                 175
Arg Met Ser Glu Phe Leu Lys Asp Cys Ala Glu Arg Ile Ile Ile Leu
            180                 185                 190
Lys Ile Val His Arg Arg Ile Ile Asn Arg Phe His Ser Phe Leu Leu
        195                 200                 205
Phe Met Gly His Pro Pro Tyr Ala Ile Arg Glu Val Asn Ile Asn Lys
    210                 215                 220
Phe Cys Arg Ile Ile Ser Glu Phe Ala Leu Glu Tyr Arg Thr Thr Arg
225                 230                 235                 240
Glu Arg Val Leu Gln Gln Lys Gln Lys Arg Ala Asn His Arg Glu Arg
                245                 250                 255
Asn Lys Thr Arg Gly Lys Met Ile Thr Asp Ser Gly Lys Phe Ser Gly
                260                 265                 270
Ser Ser Pro Ala Pro Pro Ser Gln Pro Gln Gly Leu Ser Tyr Ala Glu
```

3561

```
        275                 280                 285
Asp Ala Ala Glu His Glu Asn Met Lys Ala Val Leu Lys Thr Ser Ser
    290                 295                 300
Pro Ser Arg Ser Pro Leu His Ile Pro Ser Pro Ser Cys Gln Leu Cys
305                 310                 315                 320
Phe Ser
```

```
<210> 4371
<211> 907
<212> DNA
<213> Homo sapiens

<400> 4371
actttcaaaa tggcggagtg tggagcgagc ggcagcggga gcagcgggga cagtctggac
60
aagagcatca cgctgccccc cgacgagatc ttccgcaacc tggagaacgc caagcgcttc
120
gccatcgaca taggcgggtc gttaaccaag ctggcctact attcaacggt acagcacaaa
180
gtcgccaagg tgcggtcttt cgaccactcc ggaaaggaca cagaacgtga acatgagccg
240
ccctatgaga tttcagttca agaagagatc actgctcgac tgcacttcat taagtttgag
300
aatacctaca tcgaagcctg cctggacttc atcaaagacc atctcgtcaa cacagagacc
360
aaggtcatcc aggcgaccgg gggcggggcc tacaagttca aggacctcat cgaagagaag
420
ctgcggctga aagtcgacaa ggaggacgtg atgacgtgcc tgattaaggg gtgcaacttc
480
gtgctcaaga acatccccca tgaggccttc gtgtaccaga aggattccga ccctgagttc
540
cggttccaga ccaaccaccc ccacattttc ccctatcttc ttgtcaatat cggctctgga
600
gtctccatcg tgaaggtgga gacggaggac aggttcgagt gggtcggcgg cagctccatt
660
ggaggcggca ccttctgggg gcttggcgct ctgctcacca aaacgaagaa gtttgacgag
720
ctcctgcacc tggcctcgag gggccagcac agcaatgtgg acatgctggt gcgggacgtc
780
tacggcggcg cccaccagac tctcgggctg agcgggaacc tcatcgccag cagcttcggg
840
aagtcggcca ccgccgacca agagttctcc aaagaagaca tggcgaagag cctgctgcac
900
atgatca
907
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<210> 4372
<211> 302
<212> PRT
<213> Homo sapiens

<400> 4372
Thr Phe Lys Met Ala Glu Cys Gly Ala Ser Gly Ser Gly Ser Ser Gly
```

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1                    5                        10                       15
Asp Ser Leu Asp Lys Ser Ile Thr Leu Pro Pro Asp Glu Ile Phe Arg
            20                      25                  30
Asn Leu Glu Asn Ala Lys Arg Phe Ala Ile Asp Ile Gly Gly Ser Leu
        35                      40                  45
Thr Lys Leu Ala Tyr Tyr Ser Thr Val Gln His Lys Val Ala Lys Val
    50                      55                  60
Arg Ser Phe Asp His Ser Gly Lys Asp Thr Glu Arg Glu His Glu Pro
65                      70                  75                      80
Pro Tyr Glu Ile Ser Val Gln Glu Glu Ile Thr Ala Arg Leu His Phe
                85                      90                  95
Ile Lys Phe Glu Asn Thr Tyr Ile Glu Ala Cys Leu Asp Phe Ile Lys
                100                     105                 110
Asp His Leu Val Asn Thr Glu Thr Lys Val Ile Gln Ala Thr Gly Gly
        115                     120                 125
Gly Ala Tyr Lys Phe Lys Asp Leu Ile Glu Glu Lys Leu Arg Leu Lys
        130                     135                 140
Val Asp Lys Glu Asp Val Met Thr Cys Leu Ile Lys Gly Cys Asn Phe
145                     150                 155                 160
Val Leu Lys Asn Ile Pro His Glu Ala Phe Val Tyr Gln Lys Asp Ser
                165                     170                 175
Asp Pro Glu Phe Arg Phe Gln Thr Asn His Pro His Ile Phe Pro Tyr
                180                     185                 190
Leu Leu Val Asn Ile Gly Ser Gly Val Ser Ile Val Lys Val Glu Thr
        195                     200                 205
Glu Asp Arg Phe Glu Trp Val Gly Gly Ser Ser Ile Gly Gly Gly Thr
        210                     215                 220
Phe Trp Gly Leu Gly Ala Leu Leu Thr Lys Thr Lys Lys Phe Asp Glu
225                     230                 235                 240
Leu Leu His Leu Ala Ser Arg Gly Gln His Ser Asn Val Asp Met Leu
                245                     250                 255
Val Arg Asp Val Tyr Gly Gly Ala His Gln Thr Leu Gly Leu Ser Gly
                260                     265                 270
Asn Leu Ile Ala Ser Ser Phe Gly Lys Ser Ala Thr Ala Asp Gln Glu
        275                     280                 285
Phe Ser Lys Glu Asp Met Ala Lys Ser Leu Leu His Met Ile
        290                     295                 300
```

```
<210> 4373
<211> 1017
<212> DNA
<213> Homo sapiens

<400> 4373
acgcgtcatc acggctgcgc cggggggaatc cgtgcgggcg ccttccgtcc cggtcccatc
60
ctcgccgcgc tccagcacct ctgaagtttt gcagcgccca gaaaggaggc gaggaaggag
120
ggagtgtgtg agaggaggga gcaaaaagct caccctaaaa catttatttc aaggagaaaa
180
gaaaaagggg gggcgcaaaa atggctgggg caattataga aaacatgagc accaagaagc
240
tgtgcattgt tggtgggatt ctgctcgtgt tccaaatcat cgcctttctg gtgggaggct
300
```

tgattgctcc agggcccaca acggcagtgt cctacatgtc ggtgaaatgt gtggatgccc
360
gtaagaacca tcacaagaca aaatggttcg tgccttgggg acccaatcat tgtgacaaga
420
tccgagacat tgaagaggca attccaaggg aaattgaagc caatgacatc gtgttttctg
480
ttcacattcc cctcccccac atggagatga gtccttggtt ccaattcatg ctgtttatcc
540
tgcagctgga cattgccttc aagctaaaca accaaatcag agaaatgca gaagtctcca
600
tggacgtttc cctggcttac cgtgatgacg cgtttgctga gtggactgaa atggcccatg
660
aaagagtacc acggaaactc aaatgcacct tcacatctcc caagactcca gagcatgagg
720
gccgttacta tgaatgtgat gtccttcctt tcatggaaat tgggtctgtg gcccataagt
780
tttacctttt aaacatccgg ctgcctgtga atgagaagaa gaaaatcaat gtgggaattg
840
gggagataaa ggatatccgg ttggtgggga tccaccaaaa tggaggcttc accaaggtgt
900
ggtttgccat gaagaccttc cttacgccca gcatcttcat cattatggtg tggtattgga
960
ggaggatcac catgatgtcc cgacccccag tgcttctgga aaaagtcatc tttgccc
1017

<210> 4374
<211> 272
<212> PRT
<213> Homo sapiens

<400> 4374
Met Ala Gly Ala Ile Ile Glu Asn Met Ser Thr Lys Lys Leu Cys Ile
1   5   10   15
Val Gly Gly Ile Leu Leu Val Phe Gln Ile Ile Ala Phe Leu Val Gly
            20   25   30
Gly Leu Ile Ala Pro Gly Pro Thr Thr Ala Val Ser Tyr Met Ser Val
        35   40   45
Lys Cys Val Asp Ala Arg Lys Asn His His Lys Thr Lys Trp Phe Val
    50   55   60
Pro Trp Gly Pro Asn His Cys Asp Lys Ile Arg Asp Ile Glu Glu Ala
65   70   75   80
Ile Pro Arg Glu Ile Glu Ala Asn Asp Ile Val Phe Ser Val His Ile
                85   90   95
Pro Leu Pro His Met Glu Met Ser Pro Trp Phe Gln Phe Met Leu Phe
            100   105   110
Ile Leu Gln Leu Asp Ile Ala Phe Lys Leu Asn Asn Gln Ile Arg Glu
        115   120   125
Asn Ala Glu Val Ser Met Asp Val Ser Leu Ala Tyr Arg Asp Asp Ala
    130   135   140
Phe Ala Glu Trp Thr Glu Met Ala His Glu Arg Val Pro Arg Lys Leu
145   150   155   160
Lys Cys Thr Phe Thr Ser Pro Lys Thr Pro Glu His Glu Gly Arg Tyr
                165   170   175
Tyr Glu Cys Asp Val Leu Pro Phe Met Glu Ile Gly Ser Val Ala His

```
              180                    185                    190
Lys Phe Tyr Leu Leu Asn Ile Arg Leu Pro Val Asn Glu Lys Lys Lys
          195                    200                    205
Ile Asn Val Gly Ile Gly Glu Ile Lys Asp Ile Arg Leu Val Gly Ile
      210                    215                    220
His Gln Asn Gly Gly Phe Thr Lys Val Trp Phe Ala Met Lys Thr Phe
225                    230                    235                    240
Leu Thr Pro Ser Ile Phe Ile Ile Met Val Trp Tyr Trp Arg Arg Ile
              245                    250                    255
Thr Met Met Ser Arg Pro Pro Val Leu Leu Glu Lys Val Ile Phe Ala
          260                    265                    270
```

<210> 4375
<211> 1966
<212> DNA
<213> Homo sapiens

<400> 4375
aaggtgcctg cattgtatac caccacgtcg ggcaggtgct cctggaggga tttcttgatg
60
ttcctctcca ccttatccag gtactcatca tcctctgtgc cccactccag ctccaccttc
120
cgcctgacgg ccagctttgg gagggccggc cccgggatgc tacacacaac ccagctgtac
180
cagcatgtgc cagagacacg ctggccaatc gtgtactcgc cgcgctacaa catcaccttc
240
atgggcctgg agaagctgca tccctttgat gccggaaaat ggggcaaagt gatcaatttc
300
ctaaaagaag agaagcttct gtctgacagc atgctggtgg aggcgcggga ggcctcggag
360
gaggacctgc tggtggtgca cacgaggcgc tatcttaatg agctcaagtg gtcctttgct
420
gttgctacca tcacagaaat ccccccccgtt atcttcctcc ccaacttcct tgtgcagagg
480
aaggtgctga ggccccttcg acccagaca ggaggaacca taatggcggg gaagctggct
540
gtggagcgag ctgggccat caacgtgggg ggtggcttcc accactgctc cagcgaccgt
600
ggcggggggct tctgtgccta tgcggacatc acgctcgcca tcaagtttct gtttgagcgt
660
gtggagggca tctccagggc taccatcatt gatcttgatg cccatcaggg caatgggcat
720
gagcgagact tcatggacga caagtgtgtg acatgcatgg atgtctacaa ccgccacatc
780
tacccagggg accgctttgc caagcaggcc atcaggcgga aggtggagct ggagtggggc
840
acagaggatg atgagtacct ggataaggtg gagaggaaca tcaagaaatc cctccaggag
900
cacctgcccg acgtggtggt atacaatgca ggcaccgaca tcctcgaggg ggaccgcctt
960
ggggggctgt ccatcagccc agcgggcatc gtgaagcggg atgagctggt gttccggatg
1020
gtccgtggcc gccgggtgcc catccttatg gtgacctcag gcgggtacca gaagcgcaca
1080
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gcccgcatca ttgctgactc catacttaat ctgtttggcc tggggctcat tgggcctgag
1140
tcacccagcg tctccgcaca gaactcagac acaccgctgc ttccccctgc agtgccctga
1200
cccttgctgc cctgcctgtc acgtggccct gcctatccgc cccttagtgc tttttgtttt
1260
ctaacctcat ggggtggtgg aggcagcctt cagtgagcat ggaggggcag ggccatccct
1320
ggctggggcc tggagctggc ccttcctcta cttttccctg ctggaagcca gaagggcttg
1380
aggcctctat gggtggggc agaaagcaga gcctgtgtcc cagggaccc acacgaagtc
1440
accagcccat aggtccaggg aggcaggcag ttaactgaga attggagagg acaggctagg
1500
tcccaggcac agcgagggcc ctgggcttgg ggtgttctgg ttttgagaac ggcagaccca
1560
ggtcggagtg aggaagcttc cacctccatc ctgactaggc ctgcatccta actgggcctc
1620
cctccctccc cttggtcatg ggatttgctg ccctctttgc cccagagctg aagagctata
1680
ggcactggtg tggatggccc aggaggtgct ggagctaggt ctccaggtgg gcctggttcc
1740
caggcagcag gtgggaaccc tgggcctgga tgtgaggggc ggtcaggaag gggtacaggt
1800
gggttccctc atctggagtt cccccctcaat aaagcaaggt ctggacctgc cttcccaggc
1860
ccttctgtgg gggtgaaggt ggggaaggcc tgcggcgccc agatcactgc cttagcagta
1920
gtcttgcctg ttcagtgcaa ggggcaggtt ttggggggag gaattc
1966

<210> 4376
<211> 399
<212> PRT
<213> Homo sapiens

<400> 4376
Lys Val Pro Ala Leu Tyr Thr Thr Thr Ser Gly Arg Cys Ser Trp Arg
1   5   10   15
Asp Phe Leu Met Phe Leu Ser Thr Leu Ser Arg Tyr Ser Ser Ser Ser
            20   25   30
Val Pro His Ser Ser Ser Thr Phe Arg Leu Thr Ala Ser Phe Gly Arg
            35   40   45
Ala Gly Pro Gly Met Leu His Thr Thr Gln Leu Tyr Gln His Val Pro
        50   55   60
Glu Thr Arg Trp Pro Ile Val Tyr Ser Pro Arg Tyr Asn Ile Thr Phe
65   70   75   80
Met Gly Leu Glu Lys Leu His Pro Phe Asp Ala Gly Lys Trp Gly Lys
                85   90   95
Val Ile Asn Phe Leu Lys Glu Glu Lys Leu Leu Ser Asp Ser Met Leu
            100   105   110
Val Glu Ala Arg Glu Ala Ser Glu Glu Asp Leu Leu Val Val His Thr
            115   120   125
Arg Arg Tyr Leu Asn Glu Leu Lys Trp Ser Phe Ala Val Ala Thr Ile

```
          130                  135                  140
Thr Glu Ile Pro Pro Val Ile Phe Leu Pro Asn Phe Leu Val Gln Arg
145                  150                  155                  160
Lys Val Leu Arg Pro Leu Arg Thr Gln Thr Gly Gly Thr Ile Met Ala
               165                  170                  175
Gly Lys Leu Ala Val Glu Arg Gly Trp Ala Ile Asn Val Gly Gly Gly
          180                  185                  190
Phe His His Cys Ser Ser Asp Arg Gly Gly Gly Phe Cys Ala Tyr Ala
          195                  200                  205
Asp Ile Thr Leu Ala Ile Lys Phe Leu Phe Glu Arg Val Glu Gly Ile
     210                  215                  220
Ser Arg Ala Thr Ile Ile Asp Leu Asp Ala His Gln Gly Asn Gly His
225                  230                  235                  240
Glu Arg Asp Phe Met Asp Asp Lys Cys Val Thr Cys Met Asp Val Tyr
               245                  250                  255
Asn Arg His Ile Tyr Pro Gly Asp Arg Phe Ala Lys Gln Ala Ile Arg
          260                  265                  270
Arg Lys Val Glu Leu Glu Trp Gly Thr Glu Asp Asp Glu Tyr Leu Asp
          275                  280                  285
Lys Val Glu Arg Asn Ile Lys Lys Ser Leu Gln Glu His Leu Pro Asp
     290                  295                  300
Val Val Val Tyr Asn Ala Gly Thr Asp Ile Leu Glu Gly Asp Arg Leu
305                  310                  315                  320
Gly Gly Leu Ser Ile Ser Pro Ala Gly Ile Val Lys Arg Asp Glu Leu
               325                  330                  335
Val Phe Arg Met Val Arg Gly Arg Arg Val Pro Ile Leu Met Val Thr
          340                  345                  350
Ser Gly Gly Tyr Gln Lys Arg Thr Ala Arg Ile Ile Ala Asp Ser Ile
          355                  360                  365
Leu Asn Leu Phe Gly Leu Gly Leu Ile Gly Pro Glu Ser Pro Ser Val
     370                  375                  380
Ser Ala Gln Asn Ser Asp Thr Pro Leu Leu Pro Pro Ala Val Pro
385                  390            ·       395
```

<210> 4377
<211> 812
<212> DNA
<213> Homo sapiens

<400> 4377
ntcctgggga ggcggtgccc cccatggcga ggccggcgag agcagggcct gcttcccccc
60
gaggacagcc gcctgtggca gtatcttctg agccgctcca tgcgggagca cccggcgctg
120
cgaagcctga ggctgctgac cctggagcag ccgcaggggg attctatgat gacctgcgag
180
caggcccagc tcttggccaa cctggcgcgg ctcatccagg ccaagaaggc gctggacctg
240
ggcaccttca cgggctactc cgccctggcc ctggccctgg cgctgcccgc ggacgggcgc
300
gtggtgacct gcgaggtgga cgcgcagccc ccggagctgg acggcccct gtggaggcag
360
gccgaggcgg agcacaagat tcgactccgg ctgaagcccg ccttggagac cctggacgag
420

ctgctggcgg cgggcgaggc cggcaccttc gacgtggccg tggtggatgc ggacaaggag
480
aactgctccg cctactacga gcgctgcctg cagctgctgc gacccggagg catcctcgcc
540
gtcctcagag tcctgtggcg cgggaaggtg ctgcaacctc cgaaagggga cgtggcggcc
600
gagtgtgtgc gaaacctaaa cgaacgcatc cggcgggacg tcagggtcta catcagcctc
660
ctgcccctgg gcgatggact caccttggcc ttcaagatct agggctggcc cctagtgagt
720
gggctcgagg gagggttgcc tgggaacccc aggaattgac cctgagtttt aaattcgaaa
780
ataaagtggg gctgggacac acgaaaaaaa aa
812

<210> 4378
<211> 233
<212> PRT
<213> Homo sapiens

<400> 4378
Xaa Leu Gly Arg Arg Cys Pro Pro Trp Arg Gly Arg Arg Glu Gln Gly
 1   5   10   15
Leu Leu Pro Pro Glu Asp Ser Arg Leu Trp Gln Tyr Leu Leu Ser Arg
            20   25   30
Ser Met Arg Glu His Pro Ala Leu Arg Ser Leu Arg Leu Leu Thr Leu
        35   40   45
Glu Gln Pro Gln Gly Asp Ser Met Met Thr Cys Glu Gln Ala Gln Leu
    50   55   60
Leu Ala Asn Leu Ala Arg Leu Ile Gln Ala Lys Lys Ala Leu Asp Leu
65   70   75   80
Gly Thr Phe Thr Gly Tyr Ser Ala Leu Ala Leu Ala Leu Ala Leu Pro
                85   90   95
Ala Asp Gly Arg Val Val Thr Cys Glu Val Asp Ala Gln Pro Pro Glu
            100   105   110
Leu Gly Arg Pro Leu Trp Arg Gln Ala Glu Ala Glu His Lys Ile Arg
        115   120   125
Leu Arg Leu Lys Pro Ala Leu Glu Thr Leu Asp Glu Leu Leu Ala Ala
    130   135   140
Gly Glu Ala Gly Thr Phe Asp Val Ala Val Val Asp Ala Asp Lys Glu
145   150   155   160
Asn Cys Ser Ala Tyr Tyr Glu Arg Cys Leu Gln Leu Leu Arg Pro Gly
                165   170   175
Gly Ile Leu Ala Val Leu Arg Val Leu Trp Arg Gly Lys Val Leu Gln
            180   185   190
Pro Pro Lys Gly Asp Val Ala Ala Glu Cys Val Arg Asn Leu Asn Glu
        195   200   205
Arg Ile Arg Arg Asp Val Arg Val Tyr Ile Ser Leu Leu Pro Leu Gly
    210   215   220
Asp Gly Leu Thr Leu Ala Phe Lys Ile
225   230

<210> 4379
<211> 2347

<212> DNA
<213> Homo sapiens

<400> 4379
ngaggaccaa gccatgcgtg cctttgagct aatgaggagc aacgcggccc tgttccagct
60
gggctcggcc ccgcggtgtg ctggattgtg tgcacgactc tgaagctgca gatggagaag
120
ggggaggacc cggtccccac ctgcctcacc cgcacggggc tgttcctgcg tttcctctgc
180
agccggttcc cgcggggcgc acagctgcgg ggcgcgctgc ggacgctgag cctcctggcc
240
gcgcagggcc tgtgggcgca gacgtccgtg cttcaccgag aggatctgga aaggctcggg
300
gtgcaggagt ccgacctccg tctgttcctg gacggagaca tcctccgcca ggacagagtc
360
tccaaaggct gctactcctt catccacctc agcttccagc agtttctcac tgccctgttc
420
tacaccctgg agaaggagga ggaagaggat agggacggcc acctgggga cattgggggac
480
gtacagaagc tgctttccgg agtagaaaga ctcaggaacc ccgacctgat ccaagcaggc
540
tactactcct ttggcctcgc taacgagaag agagccaagg agttggaggc cacttttggc
600
tgccggatgt caccggacat caaacaggaa ttgctgcgat gcgacataag ttgtaagggt
660
ggacattcaa cggtgacaga cctgcaggag ctgctcggct gtctgtacga gtctcaggag
720
gaggagctgg tgaaggaggt gatggctcag ttcaaagaaa tatccctgca cttaaatgca
780
gtagacgttg tgccatcttc attctgcgtc aagcactgtc gaaacctgca gaaaatgtca
840
ctgcaggtaa taaaggagaa tctcccggag aatgtcactg cgtctgaatc agacgccgag
900
gttgagagat cccaggatga tcagcacatg cttcctttct ggacggacct ttgttccata
960
tttggatcaa ataaggatct gatgggtcta gcaatcaatg atagctttct cagtgcctcc
1020
ctagtaagga tcctgtgtga acaaatagcc tctgacacct gtcatctcca gagagtggtg
1080
ttcaaaaaca tttccccagc tgatgctcat cggaacctcn tgcctnnagc tcttcgaggt
1140
cacaagactg taacgtatct gacccttcaa ggcaatgacc aggatgatat gtttcccgca
1200
ttgtgtgagg tcttgagaca tccagaatgt aacctgcgat atctcgggtt ggtgtcttgt
1260
tccgctacca ctcagcagtg ggctgatctc tccttggccc ttgaagtcaa ccagtccctg
1320
acgtgcgtaa acctctccga caatgagctt ctggatgagg gtgctaagtt gctgtacaca
1380
actttgagac accccaagtg ctttctgcag aggttgtcgt tggaaaactg tcaccttaca
1440
gaagccaatt gcaaggacct tgctgctgtg ttggttgtca gccgggagct gacacacctg
1500

3569

tgcttggcca agaaccccat tgggaataca ggggtgaagt ttctgtgtga gggcttgagg
1560
taccccgagt gtaaactgca gaccttggtg ctttggaact gcgacataac tagcgatggc
1620
tgctgcgatc tcacaaagct tctccaagaa aaatcaagcc tgttgtgttt ggatctgggg
1680
ctgaatcaca taggagttaa gggaatgaag ttcctgtgtg aggctttgag gaaaccactg
1740
tgcaacttga gatgtctgtg gttgtgggga tgttccatcc ctccgttcag ttgtgaagac
1800
gtctgctctg ccctcagctg caaccagagc ctcgtcactc tggacctggg tcagaatccc
1860
ttggggtcta gtggagtgaa gatgctgttt gaaaccttga catgttccag tggcaccctc
1920
cggacactca ggttgaaaat agatgacttt aatgatgaac tcaataagct gctggaagaa
1980
atagaagaaa aaacccaca actgattatt gatactgaga aacatcatcc ctgggaagaa
2040
aggccttctt ctcatgactt catgatctga atcccccga gtcattcatt ctccatgaag
2100
tcatcgattt tccaggtgtg ggtgaactgc ctgtgactcc tctcctcccc cgcccctacc
2160
cctcagggat aatgagttca ttgctgggct agatgtttta gccatgattc tgcctctgtt
2220
ttatacctgc acacatcctt atctttgtta catatgaaat atctgtatca cgggtatatt
2280
gagagaaata aaggtgagag cattcacaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa
2340
aaaaaaa
2347

<210> 4380
<211> 652
<212> PRT
<213> Homo sapiens

<400> 4380
Met Glu Lys Gly Glu Asp Pro Val Pro Thr Cys Leu Thr Arg Thr Gly
 1   5   10   15
Leu Phe Leu Arg Phe Leu Cys Ser Arg Phe Pro Arg Gly Ala Gln Leu
            20   25   30
Arg Gly Ala Leu Arg Thr Leu Ser Leu Leu Ala Ala Gln Gly Leu Trp
        35   40   45
Ala Gln Thr Ser Val Leu His Arg Glu Asp Leu Glu Arg Leu Gly Val
    50   55   60
Gln Glu Ser Asp Leu Arg Leu Phe Leu Asp Gly Asp Ile Leu Arg Gln
65   70   75   80
Asp Arg Val Ser Lys Gly Cys Tyr Ser Phe Ile His Leu Ser Phe Gln
                85   90   95
Gln Phe Leu Thr Ala Leu Phe Tyr Thr Leu Glu Lys Glu Glu Glu Glu
                100   105   110
Asp Arg Asp Gly His Thr Trp Asp Ile Gly Asp Val Gln Lys Leu Leu
            115   120   125
Ser Gly Val Glu Arg Leu Arg Asn Pro Asp Leu Ile Gln Ala Gly Tyr

3570

```
            130                    135                    140
Tyr Ser Phe Gly Leu Ala Asn Glu Lys Arg Ala Lys Glu Leu Glu Ala
145                    150                    155                    160
Thr Phe Gly Cys Arg Met Ser Pro Asp Ile Lys Gln Glu Leu Leu Arg
                    165                    170                    175
Cys Asp Ile Ser Cys Lys Gly Gly His Ser Thr Val Thr Asp Leu Gln
                180                    185                    190
Glu Leu Leu Gly Cys Leu Tyr Glu Ser Gln Glu Glu Glu Leu Val Lys
            195                    200                    205
Glu Val Met Ala Gln Phe Lys Glu Ile Ser Leu His Leu Asn Ala Val
        210                    215                    220
Asp Val Val Pro Ser Ser Phe Cys Val Lys His Cys Arg Asn Leu Gln
225                    230                    235                    240
Lys Met Ser Leu Gln Val Ile Lys Glu Asn Leu Pro Glu Asn Val Thr
                    245                    250                    255
Ala Ser Glu Ser Asp Ala Glu Val Glu Arg Ser Gln Asp Asp Gln His
                260                    265                    270
Met Leu Pro Phe Trp Thr Asp Leu Cys Ser Ile Phe Gly Ser Asn Lys
            275                    280                    285
Asp Leu Met Gly Leu Ala Ile Asn Asp Ser Phe Leu Ser Ala Ser Leu
        290                    295                    300
Val Arg Ile Leu Cys Glu Gln Ile Ala Ser Asp Thr Cys His Leu Gln
305                    310                    315                    320
Arg Val Val Phe Lys Asn Ile Ser Pro Ala Asp Ala His Arg Asn Leu
                    325                    330                    335
Xaa Pro Xaa Ala Leu Arg Gly His Lys Thr Val Thr Tyr Leu Thr Leu
                340                    345                    350
Gln Gly Asn Asp Gln Asp Asp Met Phe Pro Ala Leu Cys Glu Val Leu
            355                    360                    365
Arg His Pro Glu Cys Asn Leu Arg Tyr Leu Gly Leu Val Ser Cys Ser
        370                    375                    380
Ala Thr Thr Gln Gln Trp Ala Asp Leu Ser Leu Ala Leu Glu Val Asn
385                    390                    395                    400
Gln Ser Leu Thr Cys Val Asn Leu Ser Asp Asn Glu Leu Leu Asp Glu
                    405                    410                    415
Gly Ala Lys Leu Leu Tyr Thr Thr Leu Arg His Pro Lys Cys Phe Leu
                420                    425                    430
Gln Arg Leu Ser Leu Glu Asn Cys His Leu Thr Glu Ala Asn Cys Lys
            435                    440                    445
Asp Leu Ala Ala Val Leu Val Val Ser Arg Glu Leu Thr His Leu Cys
        450                    455                    460
Leu Ala Lys Asn Pro Ile Gly Asn Thr Gly Val Lys Phe Leu Cys Glu
465                    470                    475                    480
Gly Leu Arg Tyr Pro Glu Cys Lys Leu Gln Thr Leu Val Leu Trp Asn
                    485                    490                    495
Cys Asp Ile Thr Ser Asp Gly Cys Cys Asp Leu Thr Lys Leu Leu Gln
                500                    505                    510
Glu Lys Ser Ser Leu Leu Cys Leu Asp Leu Gly Leu Asn His Ile Gly
            515                    520                    525
Val Lys Gly Met Lys Phe Leu Cys Glu Ala Leu Arg Lys Pro Leu Cys
        530                    535                    540
Asn Leu Arg Cys Leu Trp Leu Trp Gly Cys Ser Ile Pro Pro Phe Ser
545                    550                    555                    560
Cys Glu Asp Val Cys Ser Ala Leu Ser Cys Asn Gln Ser Leu Val Thr
```

```
                   565                    570                    575
Leu Asp Leu Gly Gln Asn Pro Leu Gly Ser Ser Gly Val Lys Met Leu
                   580                    585                    590
Phe Glu Thr Leu Thr Cys Ser Ser Gly Thr Leu Arg Thr Leu Arg Leu
              595                    600                    605
Lys Ile Asp Asp Phe Asn Asp Glu Leu Asn Lys Leu Leu Glu Glu Ile
         610                    615                    620
Glu Glu Lys Asn Pro Gln Leu Ile Ile Asp Thr Glu Lys His His Pro
     625                    630                    635              640
Trp Glu Glu Arg Pro Ser Ser His Asp Phe Met Ile
                   645                    650
```

<210> 4381
<211> 1638
<212> DNA
<213> Homo sapiens

<400> 4381

```
nnagagcccg gggcgagtgg gcctctgctc gtgggtggtt ctcgtggagg tcagctcccg
60
cgtgtctccg ctcgacaggg tgcttgggca gagcccatcg ggtaggcgcg ggccatggcg
120
cagtacaagg gcaccatgcg cgaggcaggc cgtgccatgc acctcctcaa gaagcgcgaa
180
aggcagcggg agcagatgga ggtgctgaag cagcgcatcg ccgaggagac catcctcaag
240
tcgcaggtgg acaagaggtt ctcggcgcat tacgacgccg tggaggccga gctgaagtcc
300
agcgcggtgg gcctggtgac cctgaacgac atgaaggccc ggcaggaggc cctggtcagg
360
gagcgcgagc ggcagctggc caagcgccag cacctggagg agcagcggct gcagcaggag
420
cggcagcggg agcaggagca gcggcgcgag cgcaagcgta agatctcctg cctgtccttt
480
gcactagacg acctcgatga ccaggccgac gcggccgagg ccaggcgcgc cggaaacctg
540
ggcaagaacc ccgacgtgga caccagcttc ctgccagacc gcgaccgcga ggaggaggag
600
aaccggctcc gagaggagct gcgccaagag tgggaggcgc agcgcgagaa agtgaaggac
660
gaggagatgg aggtcacctt cagctactgg gacggctcgg gccaccggcg cacggtgcgg
720
gtgcgcaagg gcaacacggt gcagcagttc ctgaagaagg cgctgcaggg gctgcgcaag
780
gacttcctgg agctgcgctc cgccggcgtg gagcagctca tgttcatcaa ggaggacctc
840
atcctgccgc actaccacac cttctacgac ttcatcatcg ccagggcgag gggcaagagc
900
gggccgctct tcagcttcga tgtgcacgat gacgtgcgcc tgctcagcga cgccaccatg
960
gagaaggacg agtcgcacgc gggcaaggtg gtgctgcgca gctggtacga gaagaacaag
1020
cacatcttcc ccgccagccg ctgggaggcc tatgaccccg agaagaagtg ggacaagtac
1080
```

accatccgct aacacccgcc tgccagagcg gaaaccgggg gtggggggag acactcattt
1140
ctaggcccca tcaccagtca cttgatttcg tgaccttgat ttcttccccc aaatttaata
1200
aagacagagg gttctcatga ttcacattgg ttgtgctatt gctgatgtta tgctttggtt
1260
gcttggttgg tcttttctga gtattttagt gttgccacct ggatttgctg cattgctctg
1320
ctgagctgta ttgaaaccat gactgggccc actgtcagac agaaattaga ataggaggca
1380
cattttttac ctggtggtta tgagcatgga cttgggggcc acagtgactg agtttgattc
1440
ccgacacagc ctcctccttg ctgtgtagtt ttgggtaagc ttattaaacc cccatgcctc
1500
agtttggtca cctgtaaaag gaaataacaa gagcacttac tttataagat tgatgtgagt
1560
attaagtgaa ttaatatttg taaaacgctt agctcttaat aaatgtttct gttgttatta
1620
aaaaaaaaaa aaaaaaaa
1638

<210> 4382
<211> 325
<212> PRT
<213> Homo sapiens

<400> 4382
Met Ala Gln Tyr Lys Gly Thr Met Arg Glu Ala Gly Arg Ala Met His
 1   5   10   15
Leu Leu Lys Lys Arg Glu Arg Gln Arg Glu Gln Met Glu Val Leu Lys
             20   25   30
Gln Arg Ile Ala Glu Glu Thr Ile Leu Lys Ser Gln Val Asp Lys Arg
         35   40   45
Phe Ser Ala His Tyr Asp Ala Val Glu Ala Glu Leu Lys Ser Ser Ala
     50   55   60
Val Gly Leu Val Thr Leu Asn Asp Met Lys Ala Arg Gln Glu Ala Leu
65   70   75   80
Val Arg Glu Arg Glu Arg Gln Leu Ala Lys Arg Gln His Leu Glu Glu
                 85   90   95
Gln Arg Leu Gln Gln Glu Arg Gln Arg Glu Gln Glu Gln Arg Arg Glu
             100   105   110
Arg Lys Arg Lys Ile Ser Cys Leu Ser Phe Ala Leu Asp Asp Leu Asp
         115   120   125
Asp Gln Ala Asp Ala Ala Glu Ala Arg Arg Ala Gly Asn Leu Gly Lys
     130   135   140
Asn Pro Asp Val Asp Thr Ser Phe Leu Pro Asp Arg Asp Arg Glu Glu
145   150   155   160
Glu Glu Asn Arg Leu Arg Glu Glu Leu Arg Gln Glu Trp Glu Ala Gln
                 165   170   175
Arg Glu Lys Val Lys Asp Glu Glu Met Glu Val Thr Phe Ser Tyr Trp
             180   185   190
Asp Gly Ser Gly His Arg Arg Thr Val Arg Val Arg Lys Gly Asn Thr
         195   200   205
Val Gln Gln Phe Leu Lys Lys Ala Leu Gln Gly Leu Arg Lys Asp Phe

3573

```
           210                      215                      220
Leu Glu Leu Arg Ser Ala Gly Val Glu Gln Leu Met Phe Ile Lys Glu
225                      230                      235                      240
Asp Leu Ile Leu Pro His Tyr His Thr Phe Tyr Asp Phe Ile Ile Ala
                         245                      250                      255
Arg Ala Arg Gly Lys Ser Gly Pro Leu Phe Ser Phe Asp Val His Asp
                260                      265                      270
Asp Val Arg Leu Leu Ser Asp Ala Thr Met Glu Lys Asp Glu Ser His
                275                      280                      285
Ala Gly Lys Val Val Leu Arg Ser Trp Tyr Glu Lys Asn Lys His Ile
                290                      295                      300
Phe Pro Ala Ser Arg Trp Glu Ala Tyr Asp Pro Glu Lys Lys Trp Asp
305                      310                      315                      320
Lys Tyr Thr Ile Arg
                325
```

```
<210> 4383
<211> 419
<212> DNA
<213> Homo sapiens
```

```
<400> 4383
cgagatctgg cgtgttttat acagtttgaa aatgtcaaca tttactatgg gactcagcat
60
aaaatgaaat ataaagcgcc cactgactat tgctttgttt taaagcaccc ccaaattcag
120
aaggagtccc agtatatcaa gtatctctgc tgtgatgaca caagaaccct taaccagtgg
180
gtcatgggaa tacggatagc caagtatggg aagactctct atgataacta ccagcgggct
240
gtggcaaagg ctggacttgc ctctcggtgg acaaacttgg ggacagtcaa tgcagctgca
300
ccagctcagc catttacagg acctaaaaca ggcaccaccc agcccaatgg acagattccc
360
caggctacac atttcttcag tgctgttctc caagaagccc agagacatgc tgaaaactn
419
```

```
<210> 4384
<211> 139
<212> PRT
<213> Homo sapiens
```

```
<400> 4384
Arg Asp Leu Ala Cys Phe Ile Gln Phe Glu Asn Val Asn Ile Tyr Tyr
1               5                      10                      15
Gly Thr Gln His Lys Met Lys Tyr Lys Ala Pro Thr Asp Tyr Cys Phe
                20                      25                      30
Val Leu Lys His Pro Gln Ile Gln Lys Glu Ser Gln Tyr Ile Lys Tyr
        35                      40                      45
Leu Cys Cys Asp Asp Thr Arg Thr Leu Asn Gln Trp Val Met Gly Ile
        50                      55                      60
Arg Ile Ala Lys Tyr Gly Lys Thr Leu Tyr Asp Asn Tyr Gln Arg Ala
65                      70                      75                      80
Val Ala Lys Ala Gly Leu Ala Ser Arg Trp Thr Asn Leu Gly Thr Val
```

```
              85                    90                    95
Asn Ala Ala Ala Pro Ala Gln Pro Phe Thr Gly Pro Lys Thr Gly Thr
             100                   105                   110
Thr Gln Pro Asn Gly Gln Ile Pro Gln Ala Thr His Phe Phe Ser Ala
         115                   120                   125
Val Leu Gln Glu Ala Gln Arg His Ala Glu Asn
     130                   135
```

```
<210> 4385
<211> 754
<212> DNA
<213> Homo sapiens
```

```
<400> 4385
ntttagagga gggtctgggc tagtttattt tctctctgga ggggtcttca gggagagcag
60
tcccggctgc tcaagcgggt gggaaggagc ggccactctt gctgaaaggt ggctgggaga
120
ggtcctggtc agagtcggag tcagagtccc aggaggggag tggagggctc aggcactggt
180
gccccttgtg gcctcttagg ctcgaggcct tgggacaggc ccccgagcac aaagtgaggc
240
tgtctatgga gttctgcagc acgtgcacag cagaccatat atcactcagt tccttctgga
300
ggtcatcctt ccagcagcca ctggctccct gcggtatctc ttcagtctcc ggacaggcgg
360
ctgtctcatg accctgctgc ttcatcttgg tcaggatttt gcggcatttc acctgcgttt
420
tctgcatttt ctgaatgttc accaagttct ctgagatctc atcctcctgc gcttcttcaa
480
gctgctgaat cttgatttgc tgcaagcagc tctccttctc aacatggtc actgagtggt
540
tcaggaactc gaaagccttg gtctgggcct gtaactggct cttgagtgac ccaagttcac
600
atcgcaggag cttctgggag tcgggaatca tcacaatggt cttggctttg actttggaag
660
agctggtctc caagggcttc acataccacc tgttcatgct ctcccatcag ggaccacgaa
720
gaaagtcctc agctgtgacg ctgaagtttg atca
754
```

```
<210> 4386
<211> 85
<212> PRT
<213> Homo sapiens
```

```
<400> 4386
Gly Cys Leu Trp Ser Ser Ala Ala Arg Ala Gln Gln Thr Ile Tyr His
  1               5                  10                  15
Ser Val Pro Ser Gly Gly His Pro Ser Ser Ser His Trp Leu Pro Ala
             20                  25                  30
Val Ser Leu Gln Ser Pro Asp Arg Arg Leu Ser His Asp Pro Ala Ala
         35                  40                  45
Ser Ser Trp Ser Gly Phe Cys Gly Ile Ser Pro Ala Phe Ser Ala Phe
```

```
          50                      55                    60
Ser Glu Cys Ser Pro Ser Ser Leu Arg Ser His Pro Pro Ala Leu Leu
65                      70                  75                    80
Gln Ala Ala Glu Ser
                    85
```

<210> 4387
<211> 341
<212> DNA
<213> Homo sapiens

<400> 4387

```
ggggggggcc ttcccatctt tttcccttttt atggggggggg ggtttttttaa aaaaaaaggg
60
gggccccccc aaaaggggggg ggggggaagg gggttttccc accccaaaaa accccccccc
120
cccccgggn gggggggaag gggggggggg ttttccccc ctccccccccc ccctaaaaaa
180
aaaacccgga aaattttttt tccccccccc ccaaaaaaaa aaaaaaaacc gggggggcccc
240
cctttttttg ggggggggggg tttttttttt tttttttttt tttttttttt tttttttttac
300
aaaacagaga atgtttattg tgccagaggg tggagtgtgc n
341
```

<210> 4388
<211> 113
<212> PRT
<213> Homo sapiens

<400> 4388

```
Gly Gly Gly Leu Pro Ile Phe Phe Pro Phe Met Gly Gly Gly Phe Phe
  1               5                   10                  15
Lys Lys Lys Gly Gly Pro Pro Gln Lys Gly Gly Gly Gly Arg Gly Phe
                20                  25                  30
Ser His Pro Lys Lys Pro Pro Pro Pro Gly Xaa Gly Gly Arg Gly
            35                  40                  45
Gly Gly Phe Phe Pro Pro Pro Pro Pro Pro Lys Lys Lys Thr Arg Lys
            50                  55                  60
Ile Phe Phe Pro Pro Pro Pro Lys Lys Lys Lys Pro Gly Gly Pro
65                  70                  75                    80
Pro Phe Phe Gly Gly Gly Gly Phe Phe Phe Phe Phe Phe Phe Phe Phe
                85                  90                  95
Phe Phe Phe Tyr Lys Thr Glu Asn Val Tyr Cys Ala Arg Gly Trp Ser
                100                 105                 110
Val
```

<210> 4389
<211> 1895
<212> DNA
<213> Homo sapiens

<400> 4389

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nggtgttttg cgggctgccg tacagcgaag agcgcgtgct gaagagttgc gcgtggcgtg
60
gctgccgagg gccgcgcggt gtacgtggtg gacgacgcag ctgtcctggg cgcagaggac
120
ccagcggtgt acggcgattc tgcccgtgag aaggcattgc gtggagctct gcgagcctcc
180
gtggaacgac gcctgagtcg ccacgacgtc gtcatcctgg actcgcttaa ctacatcaaa
240
ggtttccgtt acgagctcta ctgcctggca cgggcggcgc gcaccccgct ctgcctggtc
300
tactgcgtac ggcccggcgg cccgatcgcg ggacctcagg tggcgggcgc gaacgagaac
360
cctggccgga acgtcagtgt gagttggcgg ccacgcgctg aggaggacgg gagagcccag
420
gcggcgggca gcagcgtcct cagggaactg catactgcgg actctgtagt aaatggaagt
480
gcccaggccg acgtacccaa ggaactggag cgagaagaat ccggggctgc ggagtctcca
540
gctcttgtga ctccggattc agagaaatct gcaaagcatg ggtccggtgc cttttactct
600
cccgaactcc tggaggccct aacgctgcgc tttgaggctc ccgattctcg gaatcgctgg
660
gaccggcctt tattcacttt ggtgggcata gaggagccgt tgccccggc ggggatccgc
720
tctgccctgt ttgagaaccg ggccccacca ccccatcagt ctacgcagtc ccagcccctc
780
gcctccggca gctttctgca ccagttggac caggtcacga gtcaagtact ggccggattg
840
atggaagcgc agaagagcgc tgtccccggg gacttgctca cgcttcctgg taccacagag
900
cacttgcggt ttacccggcc cttgaccatg gcagaactga gtcgccttcg tcgccagttt
960
atttcgtaca ctaaaatgca tcccaacaat gagaacttgc cgcaactggc caacatgttt
1020
cttcagtatt tgagccagag cctgcactaa ccagaggagg taggggggaa gccatggctt
1080
ctgatctcca ctccacttta tttctctggg aaaaataggc tgcaggtctc cagagcatat
1140
cgatgcagta ctgtactaga gctgttgtga ctgattcact caaactttcc tgcataccc
1200
tgtgccaggc cttgggttta cagcataagt tcagactaaa gagaatggag aactattgtg
1260
gtgcaacctg gcaaatccct cagaggacag agctaaggtg gacagggatt acctagattg
1320
gatcctactt gggctatcac agagcattga ccattggctt ccctcatctg aggcgtggga
1380
gagcagactg gatagatgag aattgtttta aaacaattgt gaacagaaac tgaagatggt
1440
acagttctac atctgcacct gcccttttt cataccacaa aagtatttt tgagtactgt
1500
actgactttt tgctagtttc tattctggga ccgagttcac agataaatcc attggtttgt
1560
atccttgaga aactttgttt ttgtggaagt aagaaagtta tctactagat tatttcctct
1620
```

```
aataaaatct tttaaaatag tctactggaa tctctttcac ttaatgttcc ctgtgtaact
1680
tcatgtaaca ttttaggtat acttgtcatt gttctgcctt taagtgaagt agtattttga
1740
tagttctgag agagtagatg ttttgagcta ctctacagta attatattat gacaatttcc
1800
gtaactgttt tgcttcattc tgcatttcaa ggcaaatatc attgtaagct tgtctttcat
1860
tcttcattga tttcattgaa caaatggtag gtacc
1895


<210> 4390
<211> 335
<212> PRT
<213> Homo sapiens

<400> 4390
Arg Val Ala Arg Gly Val Ala Ala Glu Gly Arg Ala Val Tyr Val Val
 1               5                  10                  15
Asp Asp Ala Ala Val Leu Gly Ala Glu Asp Pro Ala Val Tyr Gly Asp
                20                  25                  30
Ser Ala Arg Glu Lys Ala Leu Arg Gly Ala Leu Arg Ala Ser Val Glu
         35                  40                  45
Arg Arg Leu Ser Arg His Asp Val Val Ile Leu Asp Ser Leu Asn Tyr
     50                  55                  60
Ile Lys Gly Phe Arg Tyr Glu Leu Tyr Cys Leu Ala Arg Ala Ala Arg
65                  70                  75                  80
Thr Pro Leu Cys Leu Val Tyr Cys Val Arg Pro Gly Gly Pro Ile Ala
                85                  90                  95
Gly Pro Gln Val Ala Gly Ala Asn Glu Asn Pro Gly Arg Asn Val Ser
               100                 105                 110
Val Ser Trp Arg Pro Arg Ala Glu Glu Asp Gly Arg Ala Gln Ala Ala
           115                 120                 125
Gly Ser Ser Val Leu Arg Glu Leu His Thr Ala Asp Ser Val Val Asn
       130                 135                 140
Gly Ser Ala Gln Ala Asp Val Pro Lys Glu Leu Glu Arg Glu Glu Ser
145                 150                 155                 160
Gly Ala Ala Glu Ser Pro Ala Leu Val Thr Pro Asp Ser Glu Lys Ser
               165                 170                 175
Ala Lys His Gly Ser Gly Ala Phe Tyr Ser Pro Glu Leu Leu Glu Ala
           180                 185                 190
Leu Thr Leu Arg Phe Glu Ala Pro Asp Ser Arg Asn Arg Trp Asp Arg
       195                 200                 205
Pro Leu Phe Thr Leu Val Gly Ile Glu Glu Pro Leu Pro Pro Ala Gly
   210                 215                 220
Ile Arg Ser Ala Leu Phe Glu Asn Arg Ala Pro Pro Pro His Gln Ser
225                 230                 235                 240
Thr Gln Ser Gln Pro Leu Ala Ser Gly Ser Phe Leu His Gln Leu Asp
               245                 250                 255
Gln Val Thr Ser Gln Val Leu Ala Gly Leu Met Glu Ala Gln Lys Ser
           260                 265                 270
Ala Val Pro Gly Asp Leu Leu Thr Leu Pro Gly Thr Thr Glu His Leu
   275                 280                 285
Arg Phe Thr Arg Pro Leu Thr Met Ala Glu Leu Ser Arg Leu Arg Arg
```

```
       290                    295                    300
Gln Phe Ile Ser Tyr Thr Lys Met His Pro Asn Asn Glu Asn Leu Pro
305                    310                    315                    320
Gln Leu Ala Asn Met Phe Leu Gln Tyr Leu Ser Gln Ser Leu His
                 325                    330                    335
```

<210> 4391
<211> 988
<212> DNA
<213> Homo sapiens

<400> 4391
nagcccttct cctggcccca tggagcctcc ccacgagccc aggggcatcc gagcatgggc
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ggcccaatgc agagggtgac gcctcctcgt ggcatggcca gcgtggggcc ccagagctat
120
ggaggtggca tgcgaccccc acccaactcc ctcgccggcc caggcctgcc tgccatgaac
180
atgggcccag gagttcgtgg cccgtgggcc agccccagtg gaaactcgat cccctactcc
240
tcctcatccc ccggcagcta caccggaccc ccaggaggag gtgggccccc tggaacaccc
300
atcatgccta gccctggaga ttccaccaac tccagcgaaa acatgtacac tatcatgaac
360
cccatcgggc agggcgccgg cagggctaat ttcccgctcg ccctggccc ggagggcccc
420
atggccgcca tgagcgcgat ggagcctcac cacgtgaacg atccctggg ctcgggcgac
480
atggacgggt tgccgaagag ttcccccggc gccgtggccg gcctgagcaa cgccccgggc
540
accccgcggg acgacggcga gatggcggcc gccgggacct tcctgcaccc gttcccgagc
600
gaaagctact cgccagggat gaccatgagc gtgtgatggg gcggcagccc cgggcctctc
660
tgcgggccta ggcttctgcc cagcgcccct gctcagggcg aggggctgag gtcacacctc
720
gggcacctgg actcctggcc aatcaaggct tgcccagctg ggaggcccca cacgaaagac
780
tcttaccatt ttattaaaaa cgcaaggacc tcagagacgt tcttttctgt atggacccct
840
cctgccattt gtattttgtc ccagagagaa aggctctttg ggggcccct ctccccagga
900
cgtcaggggg tggggcccat aaataaatgg aagctggttt ggttttttgg taaaaaaaaa
960
aaaaaaaaaa aaaaaaaaaa aaaaaaaa
988

<210> 4392
<211> 211
<212> PRT
<213> Homo sapiens

<400> 4392
Xaa Pro Phe Ser Trp Pro His Gly Ala Ser Pro Arg Ala Gln Gly His

```
1                    5                        10                        15
Pro Ser Met Gly Gly Pro Met Gln Arg Val Thr Pro Pro Arg Gly Met
            20                        25                        30
Ala Ser Val Gly Pro Gln Ser Tyr Gly Gly Gly Met Arg Pro Pro Pro
            35                        40                        45
Asn Ser Leu Ala Gly Pro Gly Leu Pro Ala Met Asn Met Gly Pro Gly
        50                        55                        60
Val Arg Gly Pro Trp Ala Ser Pro Ser Gly Asn Ser Ile Pro Tyr Ser
65                        70                        75                        80
Ser Ser Ser Pro Gly Ser Tyr Thr Gly Pro Pro Gly Gly Gly Gly Pro
                85                        90                        95
Pro Gly Thr Pro Ile Met Pro Ser Pro Gly Asp Ser Thr Asn Ser Ser
            100                       105                       110
Glu Asn Met Tyr Thr Ile Met Asn Pro Ile Gly Gln Gly Ala Gly Arg
            115                       120                       125
Ala Asn Phe Pro Leu Gly Pro Gly Pro Glu Gly Pro Met Ala Ala Met
        130                       135                       140
Ser Ala Met Glu Pro His His Val Asn Gly Ser Leu Gly Ser Gly Asp
145                       150                       155                       160
Met Asp Gly Leu Pro Lys Ser Ser Pro Gly Ala Val Ala Gly Leu Ser
                165                       170                       175
Asn Ala Pro Gly Thr Pro Arg Asp Asp Gly Glu Met Ala Ala Ala Gly
            180                       185                       190
Thr Phe Leu His Pro Phe Pro Ser Glu Ser Tyr Ser Pro Gly Met Thr
            195                       200                       205
Met Ser Val
    210


<210> 4393
<211> 2171
<212> DNA
<213> Homo sapiens

<400> 4393
gaggccaccc gccccggggc ctgggctcgc tgtggactcg tcatggcgac cgagcagagg
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cctttccacc tggtggtgtt cggcgcgtct ggcttcaccg gccagttcgt gaccgaggag
120
gtggcccggg agcaggtgga cccggagcgg agctcccctg ccctgggcgt ggcgggccgc
180
tcccgggaga agctgcagcg ggtgctggag aaggcggccc tgaagctggg aagaccaaca
240
ctgtcatctg aagttggaat catcatctgt gatattgcta atccagcctc gcttgatgaa
300
atggctaaac aggcaacagt tgtcctcaat tgcgtaggac catatcggtt ttatggagaa
360
cctgtaataa aagcatgtat tgaaaatgga gccagttgta tcgacatcag tggagaacct
420
cagtttctgg aactaatgca actgaagtat catgagaaag ctgcagacaa aggggtttat
480
atcattggaa gcagcggctt tgactccatt ccagcagatc tgggagtaat atataccaga
540
aataaaatga atggtacttt gactgctgtg gaaagtttcc tgactataca ttcaggacct
600
```

```
gaggggttga gcattcatga tggtacctgg aagtcagcaa tttatggttt tggagatcag
660
agtaatttga gaaaactaag aaatgtatca aatctgaaac ctgtcccgct cattggtcca
720
aaattgaaga gaaggtggcc aatttcttat tgtcgggaac tcaaaggtta ttccattcct
780
tttatgggat ctgatgtgtc tgttgtaagg aggactcaac gttacttgta tgaaaattta
840
gaggaatcac cagttcagta tgctgcgtat gtaactgtgg gaggcatcac ctctgttatt
900
aagctgatgt ttgcaggact tttctttttg ttctttgtga ggtttggaat tggaaggcaa
960
cttctcataa aattcccatg gttcttctcc tttggctatt tttcaaaaca aggcccaaca
1020
caaaaacaga ttgatgctgc ctcattcacg ctgacattct ttggtcaagg atacagccaa
1080
ggcactggta cagataagaa caaaccaaat atcaaaattt gtactcaggt gaaaggacca
1140
gaggctggct atgtggctac ccccatagct atggttcagg cagccatgac tcttctaagt
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gatgcttctc atctgcctaa ggcgggcggg gtcttcacac ctggagcagc tttttccaaa
1260
acaaagttga ttgacagact caacaaacac ggtattgagt ttagtgttat tagcagctct
1320
gaagtctaaa cactggaaga attaactgaa gtcataacgt gcgtgaatta acagcttctc
1380
tatttgatat ttgaaattct tctgtaagcc tgtctgagtg tatgtggaaa cgattgtcaa
1440
atctaaaata tctatatatt aaaaagtagg aaattgtcct agcttaccct aaatttcaaa
1500
tctgagttga ttttgtgatt ttattgctta taacagagaa ctcatatttg acatattttt
1560
ttcattgatg tgttcctggt agattttcac gaatgagctg gcaggtctaa tgggggaggc
1620
ggcgtcccag tctgtgttgc agcagcattc tcatcggggg tgcgcacacc atcgttactg
1680
tcgggcagta actgccgctt gccttccgc agtaggaggg aaatctcacc ttccttccac
1740
atactgtctt gagcctttgc taaattaaac tgcacttttt gctgtttttg cctagttttt
1800
cgccaatcta cactgatttt ggactgttac ctaagttgaa aaataaaagg ttgtcaatcg
1860
aatggtggtt taatgtttgg acctgccgat gtatttgtat agtggtagaa acatgctgct
1920
taagtggcct aacctgtttc ttgccaataa gtaggcttat cattttatct ttacgtaatt
1980
ctatatctgt gactaggttt ttaaggatac agcttataag ttgctatcaa ttttcactac
2040
ctaagcagaa ttttctcta atttactttt tgtatttaa ctaggtttta catggaagcc
2100
ctaaaataag gcaaaagact ttttctttg taataagcat ataataaaca cgtatataca
2160
tagcaaattg a
2171
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<210> 4394
<211> 428
<212> PRT
<213> Homo sapiens

<400> 4394
Met Ala Thr Glu Gln Arg Pro Phe His Leu Val Val Phe Gly Ala Ser
1   5   10   15
Gly Phe Thr Gly Gln Phe Val Thr Glu Glu Val Ala Arg Glu Gln Val
            20   25   30
Asp Pro Glu Arg Ser Ser Pro Ala Leu Gly Val Ala Gly Arg Ser Arg
        35   40   45
Glu Lys Leu Gln Arg Val Leu Glu Lys Ala Ala Leu Lys Leu Gly Arg
    50   55   60
Pro Thr Leu Ser Ser Glu Val Gly Ile Ile Ile Cys Asp Ile Ala Asn
65   70   75   80
Pro Ala Ser Leu Asp Glu Met Ala Lys Gln Ala Thr Val Val Leu Asn
                85   90   95
Cys Val Gly Pro Tyr Arg Phe Tyr Gly Glu Pro Val Ile Lys Ala Cys
            100   105   110
Ile Glu Asn Gly Ala Ser Cys Ile Asp Ile Ser Gly Glu Pro Gln Phe
            115   120   125
Leu Glu Leu Met Gln Leu Lys Tyr His Glu Lys Ala Ala Asp Lys Gly
130   135   140
Val Tyr Ile Ile Gly Ser Ser Gly Phe Asp Ser Ile Pro Ala Asp Leu
145   150   155   160
Gly Val Ile Tyr Thr Arg Asn Lys Met Asn Gly Thr Leu Thr Ala Val
                165   170   175
Glu Ser Phe Leu Thr Ile His Ser Gly Pro Glu Gly Leu Ser Ile His
            180   185   190
Asp Gly Thr Trp Lys Ser Ala Ile Tyr Gly Phe Gly Asp Gln Ser Asn
            195   200   205
Leu Arg Lys Leu Arg Asn Val Ser Asn Leu Lys Pro Val Pro Leu Ile
210   215   220
Gly Pro Lys Leu Lys Arg Arg Trp Pro Ile Ser Tyr Cys Arg Glu Leu
225   230   235   240
Lys Gly Tyr Ser Ile Pro Phe Met Gly Ser Asp Val Ser Val Val Arg
                245   250   255
Arg Thr Gln Arg Tyr Leu Tyr Glu Asn Leu Glu Glu Ser Pro Val Gln
            260   265   270
Tyr Ala Ala Tyr Val Thr Val Gly Gly Ile Thr Ser Val Ile Lys Leu
            275   280   285
Met Phe Ala Gly Leu Phe Phe Leu Phe Val Arg Phe Gly Ile Gly
            290   295   300
Arg Gln Leu Leu Ile Lys Phe Pro Trp Phe Phe Ser Phe Gly Tyr Phe
305   310   315   320
Ser Lys Gln Gly Pro Thr Gln Lys Gln Ile Asp Ala Ala Ser Phe Thr
            325   330   335
Leu Thr Phe Phe Gly Gln Gly Tyr Ser Gln Gly Thr Gly Thr Asp Lys
            340   345   350
Asn Lys Pro Asn Ile Lys Ile Cys Thr Gln Val Lys Gly Pro Glu Ala
        355   360   365
Gly Tyr Val Ala Thr Pro Ile Ala Met Val Gln Ala Ala Met Thr Leu

3582

```
            370                    375                    380
Leu Ser Asp Ala Ser His Leu Pro Lys Ala Gly Gly Val Phe Thr Pro
385                    390                    395                    400
Gly Ala Ala Phe Ser Lys Thr Lys Leu Ile Asp Arg Leu Asn Lys His
                   405                    410                    415
Gly Ile Glu Phe Ser Val Ile Ser Ser Ser Glu Val
                   420                    425
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<210> 4395
<211> 1893
<212> DNA
<213> Homo sapiens

<400> 4395

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120
ccttctcctc tgcaggcgct gaggatcacg catcctgtga ctctcccctg tcccccgcca
180
ccctctgaac cactggccac catggctact tcaaagttgc ccgtggtgcc tggggaggag
240
gaaaacacca tccttatggc caaggaaagg ctggaggccc tgcgcacagc ctttgagtcg
300
ggtgacctcc cccaggccgc ctctcacctc caggagctgc tggcctccac ggaaagcatc
360
cgcctggagg tgggcgtcac gggcgagtcg ggcgcgggca agtcctccct catcaatgcc
420
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480
atgcaaccgt cgccctatcc acacccacag ttccctgacg tgaccctctg ggacctgcca
540
ggagccggct ctccaggctg cccggctgac aagtacctaa agcaggtaga cttcagccgc
600
tatgacttct tcctgctggt ctccccccgc cgctgcgggg ccgtcgagac ccgcctggcc
660
gctgagatcc tgtgccaggg caagaagttc tactttgtgc gcaccaaggt ggacgaggac
720
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780
atccgagacc actgtgccga gcggctgcgg gaggccggcg tggctgaccc tcgcatcttc
840
ctggtgtcca acctctcgcc ggcccgctac gactttccca cgctggtgtc cacctgggag
900
cacgacctgc cctcccaccg gcgccacgct ggcctgctgt cgctccccga catctcgctg
960
gaggccttgc agaagaagaa ggccatgctt caagagcaag tcctcaagac cgccctggtg
1020
ttgggcgtca tccaggccct gccggtccca gggctggcgg ccgcctacga tgatgcgttg
1080
ctcatccact cactgcgtgg ctaccaccgc agctttggtc tggacgacga ctcgctggcc
1140
aagctggccg agcaggtggg caaacaggca ggtgacctgc gctcggtcat ccgctccccca
1200
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```
ctggccaacg aggtctcgcc tgagactgtc ctgcggctct attcccagtc gtccgacggc
1260
gccatgcggg tggcccgcgc ctttgagagg ggcatccctg tgtttgggac gctggtggct
1320
ggcggcatca gctttggcgc tgtctacacc atgctccagg gctgcctcaa cgagatggct
1380
gaggacgccc agcgtgtccg catcaaggcc ctggaggatg acgagccgca gccggaggtc
1440
agcttggaag tggccagtga caatggcgtg gaaaggggg gctccgggga gggaggtggg
1500
gaggaagccc cactctcaac ctgcaggaag ctcggcctcc ttcttaagta cattctggac
1560
agctggaaga aacacgactc agaagagaaa taaagagtgc agccccgccc ccctgcctca
1620
cccacaaact aagtcttaac aaaatccaaa ttaccaacaa aaaaggccga tgtggtgaat
1680
gtgagggctg cagttgcctg ggggtgggt gtggagggag cctgtgtccc tggcaggcag
1740
gggagccggc gtcctgggca gggcaaagga gggggcactg gggagggag gagggaggca
1800
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1860
gttggagaca tggatggtgg gcccagggtt ccc
1893


<210> 4396
<211> 463
<212> PRT
<213> Homo sapiens


<400> 4396
Met Ala Thr Ser Lys Leu Pro Val Val Pro Gly Glu Glu Glu Asn Thr
1               5                   10                  15
Ile Leu Met Ala Lys Glu Arg Leu Glu Ala Leu Arg Thr Ala Phe Glu
            20                  25                  30
Ser Gly Asp Leu Pro Gln Ala Ala Ser His Leu Gln Glu Leu Leu Ala
        35                  40                  45
Ser Thr Glu Ser Ile Arg Leu Glu Val Gly Val Thr Gly Glu Ser Gly
    50                  55                  60
Ala Gly Lys Ser Ser Leu Ile Asn Ala Leu Arg Gly Leu Glu Ala Glu
65                  70                  75                  80
Asp Pro Gly Ala Ala Leu Thr Gly Val Met Glu Thr Thr Met Gln Pro
                85                  90                  95
Ser Pro Tyr Pro His Pro Gln Phe Pro Asp Val Thr Leu Trp Asp Leu
            100                 105                 110
Pro Gly Ala Gly Ser Pro Gly Cys Pro Ala Asp Lys Tyr Leu Lys Gln
        115                 120                 125
Val Asp Phe Ser Arg Tyr Asp Phe Phe Leu Leu Val Ser Pro Arg Arg
    130                 135                 140
Cys Gly Ala Val Glu Thr Arg Leu Ala Ala Glu Ile Leu Cys Gln Gly
145                 150                 155                 160
Lys Lys Phe Tyr Phe Val Arg Thr Lys Val Asp Glu Asp Leu Ala Ala
                165                 170                 175
Thr Arg Thr Gln Arg Pro Ser Gly Phe Arg Glu Ala Ala Val Leu Gln
```

```
                180                 185                 190
Glu Ile Arg Asp His Cys Ala Glu Arg Leu Arg Glu Ala Gly Val Ala
        195                 200                 205
Asp Pro Arg Ile Phe Leu Val Ser Asn Leu Ser Pro Ala Arg Tyr Asp
    210                 215                 220
Phe Pro Thr Leu Val Ser Thr Trp Glu His Asp Leu Pro Ser His Arg
225                 230                 235                 240
Arg His Ala Gly Leu Leu Ser Leu Pro Asp Ile Ser Leu Glu Ala Leu
                245                 250                 255
Gln Lys Lys Lys Ala Met Leu Gln Glu Gln Val Leu Lys Thr Ala Leu
                260                 265                 270
Val Leu Gly Val Ile Gln Ala Leu Pro Val Pro Gly Leu Ala Ala Ala
            275                 280                 285
Tyr Asp Asp Ala Leu Leu Ile His Ser Leu Arg Gly Tyr His Arg Ser
    290                 295                 300
Phe Gly Leu Asp Asp Asp Ser Leu Ala Lys Leu Ala Glu Gln Val Gly
305                 310                 315                 320
Lys Gln Ala Gly Asp Leu Arg Ser Val Ile Arg Ser Pro Leu Ala Asn
                325                 330                 335
Glu Val Ser Pro Glu Thr Val Leu Arg Leu Tyr Ser Gln Ser Ser Asp
                340                 345                 350
Gly Ala Met Arg Val Ala Arg Ala Phe Glu Arg Gly Ile Pro Val Phe
            355                 360                 365
Gly Thr Leu Val Ala Gly Gly Ile Ser Phe Gly Ala Val Tyr Thr Met
    370                 375                 380
Leu Gln Gly Cys Leu Asn Glu Met Ala Glu Asp Ala Gln Arg Val Arg
385                 390                 395                 400
Ile Lys Ala Leu Glu Asp Asp Glu Pro Gln Pro Glu Val Ser Leu Glu
                405                 410                 415
Val Ala Ser Asp Asn Gly Val Glu Lys Gly Gly Ser Gly Glu Gly Gly
            420                 425                 430
Gly Glu Glu Ala Pro Leu Ser Thr Cys Arg Lys Leu Gly Leu Leu Leu
            435                 440                 445
Lys Tyr Ile Leu Asp Ser Trp Lys Lys His Asp Ser Glu Glu Lys
    450                 455                 460
```

<210> 4397
<211> 2543
<212> DNA
<213> Homo sapiens

<400> 4397
nccggcccc gctccgggga gcagagtccg gagcgggatc cgcggcccac aggttgcgag
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gggcggtgtt gaagaatgtg tgggcgaaca tcctgtcact tacctagaga tgttctcacg
120
agagcttgcg cctaccagga tcggcggggc cagcagcggc tcccggagtg gagggaccct
180
gataagtact gcccctctta caacaagagt cctcaatcca acagcccagt gcttctgtct
240
cgactgcact ttgagaagga tgcagactca tctgagcgta tcattgctcc catgcgctgg
300
ggcttggtcc cttcttggtt caaagaaagt gatccttcca agctgcagtt caatactacc
360

aactgtcgta gtgataccgt aatggagaaa cggtcattta aggtgcctct gggaaaggga
420
agacgctgtg tcgttttagc agatggattc tatgagtggc agcgatgtca gggaacaaac
480
cagaggcagc catacttcat ctattttcct caaatcaaga cagagaagtc aggtagcatt
540
ggtgctgcag atagtcctga gaactgggag aaagtctggg acaactggag gctgctgaca
600
atggccggga tctttgactg ctgggagccc ccagagggag gagatgtcct gtattcctat
660
accatcatca cagtggattc ctgcaaaggc ttgagtgaca tccaccacag gatgcctgcc
720
atattagatg gagaggaggc agtttctaaa tggcttgact ttggtgaagt ctcaactcag
780
gaagctctga aattaatcca cccaacagag aacatcacct tccatgcagt ctcttctgtg
840
gtgaacaact cgcgaaacaa cactcctgag tgtctggctc ctgtcgactt ggtggtcaaa
900
aaggagctca gggcaagtgg cagtagccag aggatgttgc agtggttggc cacaaagtca
960
cccaaaaagg aagactcaaa aacacctcaa aaggaagagt cagatgttcc ccagtggtcc
1020
agtcagttcc tgcagaagag tccactcccc accaagagag gcactgcagg actcctagag
1080
caatggctga agcgggagaa ggaggaggaa cctgtggcca agcgtcctta cagccagtga
1140
cacaggactt tcagagacca aggccagggt ctgctgcact gctgttctga taataggttc
1200
ttaacattgt atgtatatgt gtttgctttg ggaggaggtg gcactgtgtt agttgacagt
1260
tgtgggctca tgtagtcttt tttgccatga gtaggagccc ctagtggggc tggtggacag
1320
ctttggaaga ggtgtcctgc tgctgttacc agccatgtgg gccccatagg ggcactgcgc
1380
ctgctgccct ttcctggcag ggctggtgga gtcttccctc aaagcatgcc ttacccagct
1440
gggaagtctc tgccctgatc tggtactcct tgtagtaagc tgttttctgc tcagccactg
1500
ggctctttca ctttttttagt tcttaaaaat ttatttttaa gttctaaaat aaaataaaaa
1560
taagttctta aaatttattt ttttcctgaa taaattgtat ttggtaaact tctgcctaca
1620
ttttggaaag tgatgctggt ggggaaagtt ctagatctta cttggtttct tctagaatca
1680
gtcttcagga atggattttg tcacaaatgg ggcatggggg ctttctgagg aaataactac
1740
aagtcttggt ggtgggctcc ttattatgtt tctttttctt tcattcttga tacttggaag
1800
tcgtctgaat cctttagctt caaaccagcc tgagtttgag tgcttgccgt agcagaaact
1860
atccttacca caggtgggaa ggaaaggacc agtttctagc agtgtcgggc cactcctctt
1920
tcgaacatcc ctaagggagg cattcacaaa agctgtccca agcagctgga agaaaacagc
1980

ttccgagatg accaggagga ctgggcggcg ccgagcccag aacgctcctg gcgcagcacc
2040
gttggcgttg gccgattgct gctggtgggg ggcgggggtg caggccccag tctctatgca
2100
aatcagggat cagaagatcg gaatttccac caatcagcgg gaagcctcgg ccctgtaact
2160
gctaatggga gacagcagcg ccacgccaca ggcttttccc ctggtttcgg gaggggtggg
2220
gagccaggtg gggctcccgc ccagaccctt tcccgaggtc cgccctctcc gccttttctc
2280
taaattcctc ttttgagtgc cctcccttcc ggttgagagg cggggggttgg cccgtagttg
2340
tacactcagt caccctgcac tgtggaggcg ggggcctccc ttgtggactg atttgcgtgg
2400
gatttggttg ttttattaag agatttaaaa aattcagatg acttactagt atgactgttt
2460
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2520
aaaaaaaaaa aaaaaaaaaa aaa
2543

<210> 4398
<211> 354
<212> PRT
<213> Homo sapiens

<400> 4398
Met Cys Gly Arg Thr Ser Cys His Leu Pro Arg Asp Val Leu Thr Arg
 1   5   10   15
Ala Cys Ala Tyr Gln Asp Arg Arg Gly Gln Gln Arg Leu Pro Glu Trp
                20   25   30
Arg Asp Pro Asp Lys Tyr Cys Pro Ser Tyr Asn Lys Ser Pro Gln Ser
            35   40   45
Asn Ser Pro Val Leu Leu Ser Arg Leu His Phe Glu Lys Asp Ala Asp
        50   55   60
Ser Ser Glu Arg Ile Ile Ala Pro Met Arg Trp Gly Leu Val Pro Ser
65   70   75   80
Trp Phe Lys Glu Ser Asp Pro Ser Lys Leu Gln Phe Asn Thr Thr Asn
                85   90   95
Cys Arg Ser Asp Thr Val Met Glu Lys Arg Ser Phe Lys Val Pro Leu
            100   105   110
Gly Lys Gly Arg Arg Cys Val Val Leu Ala Asp Gly Phe Tyr Glu Trp
            115   120   125
Gln Arg Cys Gln Gly Thr Asn Gln Arg Gln Pro Tyr Phe Ile Tyr Phe
        130   135   140
Pro Gln Ile Lys Thr Glu Lys Ser Gly Ser Ile Gly Ala Ala Asp Ser
145   150   155   160
Pro Glu Asn Trp Glu Lys Val Trp Asp Asn Trp Arg Leu Leu Thr Met
                165   170   175
Ala Gly Ile Phe Asp Cys Trp Glu Pro Pro Glu Gly Gly Asp Val Leu
            180   185   190
Tyr Ser Tyr Thr Ile Ile Thr Val Asp Ser Cys Lys Gly Leu Ser Asp
        195   200   205
Ile His His Arg Met Pro Ala Ile Leu Asp Gly Glu Glu Ala Val Ser

3587

```
         210                    215                    220
Lys Trp Leu Asp Phe Gly Glu Val Ser Thr Gln Glu Ala Leu Lys Leu
225                    230                    235                    240
Ile His Pro Thr Glu Asn Ile Thr Phe His Ala Val Ser Ser Val Val
                  245                    250                    255
Asn Asn Ser Arg Asn Asn Thr Pro Glu Cys Leu Ala Pro Val Asp Leu
              260                    265                    270
Val Val Lys Lys Glu Leu Arg Ala Ser Gly Ser Ser Gln Arg Met Leu
          275                    280                    285
Gln Trp Leu Ala Thr Lys Ser Pro Lys Lys Glu Asp Ser Lys Thr Pro
      290                    295                    300
Gln Lys Glu Glu Ser Asp Val Pro Gln Trp Ser Ser Gln Phe Leu Gln
305                    310                    315                    320
Lys Ser Pro Leu Pro Thr Lys Arg Gly Thr Ala Gly Leu Leu Glu Gln
                  325                    330                    335
Trp Leu Lys Arg Glu Lys Glu Glu Glu Pro Val Ala Lys Arg Pro Tyr
                  340                    345                    350
Ser Gln
```

```
<210> 4399
<211> 723
<212> DNA
<213> Homo sapiens
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<400> 4399
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gggaaagacc gtgtgattct ggccttggag aaggaacttg gcgtgcaggc tgggcagacc
120
cagaagctgc ttctgcagaa agaggctttg gatgagcagc tggttcaggt caaggaggcc
180
gagcggcacc acagtagtcc aaagagagag ctcccgcccg ggatcgggga catggtggag
240
ctcatgggcg tccaggatca acatatggac gagcgagatg tgaggcgatt tcaactaaaa
300
attgctgaac tgaattcagt gatacggaag ctggaagaca gaaatacgct gttggcagat
360
gagaggaatg aactgctgaa acgctcacga gagaccgagg ttcagctgaa gcccctggtg
420
gagaagaaca agcggatgaa caagaagaat gaggatctgt tgcagagtat ccagaggatg
480
gaggagaaaa tcaagaacct cacgcgggaa aacgtggaaa tgaaagaaaa gctgtcagcg
540
caggcgtctc tgaagcggca tacctccttg aatgacctca gcctgacgag ggatgagcag
600
gagatcgagt tcctgaggct gcaggtgctg gagcagcagc acgtcattga cgacctctca
660
ctggagagag aacggctgtt gcgctccaaa aggcatcgag ggaaaagtct gaaaccgccc
720
aag
723
```

```
<210> 4400
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<211> 241
<212> PRT
<213> Homo sapiens

<400> 4400
Val His Arg Ile Lys Arg Glu Cys Glu Arg Asp Ile Arg Arg Leu Met
 1               5                  10                  15
Asp Glu Ile Lys Gly Lys Asp Arg Val Ile Leu Ala Leu Glu Lys Glu
             20                  25                  30
Leu Gly Val Gln Ala Gly Gln Thr Gln Lys Leu Leu Leu Gln Lys Glu
             35                  40                  45
Ala Leu Asp Glu Gln Leu Val Gln Val Lys Glu Ala Glu Arg His His
         50                  55                  60
Ser Ser Pro Lys Arg Glu Leu Pro Pro Gly Ile Gly Asp Met Val Glu
65                  70                  75                  80
Leu Met Gly Val Gln Asp Gln His Met Asp Glu Arg Asp Val Arg Arg
                 85                  90                  95
Phe Gln Leu Lys Ile Ala Glu Leu Asn Ser Val Ile Arg Lys Leu Glu
             100                 105                 110
Asp Arg Asn Thr Leu Leu Ala Asp Glu Arg Asn Glu Leu Leu Lys Arg
             115                 120                 125
Ser Arg Glu Thr Glu Val Gln Leu Lys Pro Leu Val Glu Lys Asn Lys
         130                 135                 140
Arg Met Asn Lys Lys Asn Glu Asp Leu Leu Gln Ser Ile Gln Arg Met
145                 150                 155                 160
Glu Glu Lys Ile Lys Asn Leu Thr Arg Glu Asn Val Glu Met Lys Glu
                 165                 170                 175
Lys Leu Ser Ala Gln Ala Ser Leu Lys Arg His Thr Ser Leu Asn Asp
             180                 185                 190
Leu Ser Leu Thr Arg Asp Glu Gln Glu Ile Glu Phe Leu Arg Leu Gln
         195                 200                 205
Val Leu Glu Gln Gln His Val Ile Asp Asp Leu Ser Leu Glu Arg Glu
     210                 215                 220
Arg Leu Leu Arg Ser Lys Arg His Arg Gly Lys Ser Leu Lys Pro Pro
225                 230                 235                 240
Lys


<210> 4401
<211> 1131
<212> DNA
<213> Homo sapiens

<400> 4401
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atgcccatga tgatgtatca tttttatactt actggaatcc aagccaggct ggtttctaat
120
agaaaggtga tccaaggaat cacatgtgag aaaaacagtg ctctagcaaa gggatcctcg
180
aatcaaaggc atcgagaata tttttaaata ctaatgcctt tttgctattt ccggggaaag
240
gctggattgt gctaccgacg ctcaatatcc atgcaccccg gatctggaag actttgccgg
300
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cctgcagatt ggccttaaga gaaggacgga gccacatact gctgacggcc cagaactggc
360
agagagaagg ttgccatggc tgctgttgac agtttctacc tcttgtacag ggaaatcgcc
420
aggtcttgca attgctatat ggaagctcta gctttggttg gagcctggta tacggccaga
480
aaaagcatca ctgtcatctg tgactttac agcctgatca ggctgcattt tatcccccgc
540
ctggggagca gagcagactt gatcaagcag tatggaagat gggccgttgt cagcggtgca
600
acagatggga ttggaaaagc ctacgctgaa gagttagcaa gccgaggtct caatataatc
660
ctgattagtc ggaacgagga gaagttgcag gttgttgcta aagacatagc cgacacgtac
720
aaagtggaaa ctgatattat agttgcggac ttcagcagcg gtcgtgagat ctaccttcca
780
attcgagaag ccctgaagga caaagacgtt ggcatcttgg taaataacgt gggtgtgttt
840
tatccctacc cgcagtattt cactcagctg tccgaggaca gctctggga catcataaat
900
gtgaacattg ccgccgctag tttgatggtc catgttgtgt taccgggaat ggtggagaga
960
aagaaaggtg ccatcgtcac gatctcttct gggctcctgc tgcaacccac tcctcagctg
1020
gctgcatttt ctgcttctaa ggcttattta gaccacttca gcagagcctt gcaatatgaa
1080
tatgcctcta aaggaatctt tgtacagagt ctaatncctt tctatgtagc c
1131

<210> 4402
<211> 252
<212> PRT
<213> Homo sapiens

<400> 4402
Met Ala Ala Val Asp Ser Phe Tyr Leu Leu Tyr Arg Glu Ile Ala Arg
1   5   10   15
Ser Cys Asn Cys Tyr Met Glu Ala Leu Ala Leu Val Gly Ala Trp Tyr
            20   25   30
Thr Ala Arg Lys Ser Ile Thr Val Ile Cys Asp Phe Tyr Ser Leu Ile
        35   40   45
Arg Leu His Phe Ile Pro Arg Leu Gly Ser Arg Ala Asp Leu Ile Lys
    50   55   60
Gln Tyr Gly Arg Trp Ala Val Val Ser Gly Ala Thr Asp Gly Ile Gly
65   70   75   80
Lys Ala Tyr Ala Glu Glu Leu Ala Ser Arg Gly Leu Asn Ile Ile Leu
                85   90   95
Ile Ser Arg Asn Glu Glu Lys Leu Gln Val Val Ala Lys Asp Ile Ala
            100   105   110
Asp Thr Tyr Lys Val Glu Thr Asp Ile Ile Val Ala Asp Phe Ser Ser
        115   120   125
Gly Arg Glu Ile Tyr Leu Pro Ile Arg Glu Ala Leu Lys Asp Lys Asp
    130   135   140
Val Gly Ile Leu Val Asn Asn Val Gly Val Phe Tyr Pro Tyr Pro Gln

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145                     150                     155                     160
Tyr Phe Thr Gln Leu Ser Glu Asp Lys Leu Trp Asp Ile Ile Asn Val
                165                     170                     175
Asn Ile Ala Ala Ala Ser Leu Met Val His Val Val Leu Pro Gly Met
            180                     185                     190
Val Glu Arg Lys Lys Gly Ala Ile Val Thr Ile Ser Ser Gly Leu Leu
        195                     200                     205
Leu Gln Pro Thr Pro Gln Leu Ala Ala Phe Ser Ala Ser Lys Ala Tyr
    210                     215                     220
Leu Asp His Phe Ser Arg Ala Leu Gln Tyr Glu Tyr Ala Ser Lys Gly
225                     230                     235                     240
Ile Phe Val Gln Ser Leu Xaa Pro Phe Tyr Val Ala
                245                     250
```

<210> 4403
<211> 4237
<212> DNA
<213> Homo sapiens

<400> 4403

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nggatccaag ccatattgat tgggctgcat tggcccaagc ttggattgcc cacaagagaa
60
gcttcaggac agcaaagcat ggtagaacaa ccaccaggaa tgatgccaaa tggacaagat
120
atgtctacaa tggaatctgg tccaaacaat catgggaatt ccaaggggga ttcaaacttc
180
aacagaatgt ggcaaccaga atggggaatg catcagcaac ccccacaccc ccctccagat
240
cagccatgga tgccaccaac accaggccca atggacattg ttcctccttc tgaagacagc
300
aacagtcagg acagtgggga atttgcccct gacaacaggc atatatttaa ccagaacaat
360
cacaactttg gtggaccacc cgataatttt gcagtggggc agtgaacca gtttgactat
420
cagcatgggg ctgcttttgg tccaccgcaa ggtggatttc atcctcctta ttggcaacca
480
ggacctccag gacctccagc acctccccag aatcgaagag aaaggccatc atcattcagg
540
gatcgtcagc gttcacctat tgcacttcct gtgaagcagg agcctccaca aattgacgca
600
gtaaaacgca ggactcttcc cgcttggatt cgcgaaggtc ttgaaaaaat ggaacgtgaa
660
aagcagaaga aattggagaa agaaagaatg gaacaacaac gttcacaatt gtccaaaaaa
720
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780
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<210> 4404
<211> 779
<212> PRT
<213> Homo sapiens

<400> 4404
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Gly Met Met Pro Asn Gly Gln Asp Met Ser Thr Met Glu Ser Gly Pro
        35   40   45
Asn Asn His Gly Asn Phe Gln Gly Asp Ser Asn Phe Asn Arg Met Trp
    50   55   60
Gln Pro Glu Trp Gly Met His Gln Gln Pro Pro His Pro Pro Pro Asp
65   70   75   80
Gln Pro Trp Met Pro Pro Thr Pro Gly Pro Met Asp Ile Val Pro Pro
                85   90   95
Ser Glu Asp Ser Asn Ser Gln Asp Ser Gly Glu Phe Ala Pro Asp Asn
            100   105   110
Arg His Ile Phe Asn Gln Asn Asn His Asn Phe Gly Gly Pro Pro Asp
            115   120   125
Asn Phe Ala Val Gly Pro Val Asn Gln Phe Asp Tyr Gln His Gly Ala
        130   135   140
Ala Phe Gly Pro Pro Gln Gly Gly Phe His Pro Pro Tyr Trp Gln Pro
145   150   155   160
Gly Pro Pro Gly Pro Pro Ala Pro Pro Gln Asn Arg Arg Glu Arg Pro
                165   170   175
Ser Ser Phe Arg Asp Arg Gln Arg Ser Pro Ile Ala Leu Pro Val Lys
            180   185   190
Gln Glu Pro Pro Gln Ile Asp Ala Val Lys Arg Arg Thr Leu Pro Ala
            195   200   205
Trp Ile Arg Glu Gly Leu Glu Lys Met Glu Arg Glu Lys Gln Lys Lys
    210   215   220
Leu Glu Lys Glu Arg Met Glu Gln Gln Arg Ser Gln Leu Ser Lys Lys
225   230   235   240
Lys Lys Lys Ala Thr Glu Asp Ala Glu Gly Gly Asp Gly Pro Arg Leu
                245   250   255
Pro Gln Arg Ser Lys Phe Asp Ser Asp Glu Glu Glu Glu Asp Thr Glu
                260   265   270
Asn Val Glu Ala Ala Ser Ser Gly Lys Val Thr Arg Ser Pro Ser Pro
            275   280   285
Val Pro Gln Glu Glu His Ser Asp Pro Glu Met Thr Glu Glu Glu Lys
        290   295   300
Glu Tyr Gln Met Met Leu Leu Thr Lys Met Leu Leu Thr Glu Ile Leu
305   310   315   320
Leu Asp Val Thr Asp Glu Glu Ile Tyr Tyr Val Ala Lys Asp Ala His
                325   330   335
Arg Lys Ala Thr Lys Ala Pro Ala Lys Gln Leu Ala Gln Ser Ser Ala
            340   345   350
Leu Ala Ser Leu Thr Gly Leu Gly Gly Leu Gly Gly Tyr Gly Ser Gly
            355   360   365
Asp Ser Glu Asp Glu Arg Ser Asp Arg Gly Ser Glu Ser Ser Asp Thr

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        370                     375                   380
Asp Asp Glu Glu Leu Arg His Arg Ile Arg Gln Lys Gln Glu Ala Phe
385                     390                   395                   400
Trp Arg Lys Glu Lys Glu Gln Gln Leu Leu His Asp Lys Gln Met Glu
                405                   410                   415
Glu Glu Lys Gln Gln Thr Glu Arg Val Thr Lys Glu Met Asn Glu Phe
                420                   425                   430
Ile His Lys Glu Gln Asn Ser Leu Ser Leu Leu Glu Ala Arg Glu Ala
                435                   440                   445
Asp Gly Asp Val Val Asn Glu Lys Lys Arg Thr Pro Asn Glu Thr Thr
        450                   455                   460
Ser Val Leu Glu Pro Lys Lys Glu His Lys Glu Lys Glu Lys Gln Gly
465                     470                   475                   480
Arg Ser Arg Ser Gly Ser Ser Ser Ser Gly Ser Ser Ser Ser Asn Ser
                485                   490                   495
Arg Thr Ser Ser Thr Ser Ser Thr Val Ser Ser Ser Ser Tyr Ser Ser
                500                   505                   510
Ser Ser Gly Ser Ser Arg Thr Ser Ser Arg Ser Ser Ser Pro Lys Arg
        515                   520                   525
Lys Lys Arg His Ser Arg Ser Arg Ser Pro Thr Ile Lys Ala Arg Arg
        530                   535                   540
Ser Arg Ser Arg Ser Tyr Ser Arg Arg Ile Lys Ile Glu Ser Asn Arg
545                     550                   555                   560
Ala Arg Val Lys Ile Arg Asp Arg Arg Arg Ser Asn Arg Asn Ser Ile
                565                   570                   575
Glu Arg Glu Arg Arg Arg Asn Arg Ser Pro Ser Arg Glu Arg Arg Arg
        580                   585                   590
Ser Arg Ser Arg Ser Arg Asp Arg Arg Thr Asn Arg Ala Ser Arg Ser
        595                   600                   605
Arg Ser Arg Asp Arg Arg Lys Ile Asp Asp Gln Arg Gly Asn Leu Ser
        610                   615                   620
Gly Asn Ser His Lys His Lys Gly Glu Ala Lys Glu Gln Glu Arg Lys
625                     630                   635                   640
Lys Glu Arg Ser Arg Ser Ile Asp Lys Asp Arg Lys Lys Lys Asp Lys
                645                   650                   655
Glu Arg Glu Arg Glu Gln Asp Lys Arg Lys Glu Lys Gln Lys Arg Glu
        660                   665                   670
Glu Lys Asp Phe Lys Phe Ser Ser Gln Asp Asp Arg Leu Lys Arg Lys
        675                   680                   685
Arg Glu Ser Glu Arg Thr Phe Ser Arg Ser Gly Ser Ile Ser Val Lys
        690                   695                   700
Ile Ile Arg His Asp Ser Arg Gln Asp Ser Lys Lys Ser Thr Thr Lys
705                     710                   715                   720
Asp Ser Lys Lys His Ser Gly Ser Asp Ser Ser Gly Arg Ser Ser Ser
                725                   730                   735
Glu Ser Pro Gly Ser Ser Lys Glu Lys Lys Ala Lys Lys Pro Lys His
                740                   745                   750
Ser Arg Ser Arg Ser Val Glu Lys Ser Gln Arg Ser Gly Lys Lys Ala
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Ser Arg Lys His Lys Ser Lys Ser Arg Ser Arg
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<210> 4405
<211> 918

<212> DNA
<213> Homo sapiens

<400> 4405
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120
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180
cctctgtccc cgaagacacc tgcaccctcc atgcggagcc aagatgggga atggaactga
240
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300
tttgacctaa ccaagcacca gacctatgct gtggtggagc gatggctgaa ggagctctat
360
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420
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<210> 4406
<211> 138
<212> PRT
<213> Homo sapiens

<400> 4406
Leu Cys Leu Gln Gly Tyr Tyr Arg Gly Ala Val Gly Ala Leu Leu Val
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Phe Asp Leu Thr Lys His Gln Thr Tyr Ala Val Val Glu Arg Trp Leu
            20   25   30
Lys Glu Leu Tyr Asp His Ala Glu Ala Thr Ile Val Val Met Leu Val
        35   40   45
Gly Asn Lys Ser Asp Leu Ser Gln Ala Arg Glu Val Pro Thr Glu Glu
    50   55   60
Ala Arg Met Phe Ala Glu Asn Asn Gly Leu Leu Phe Leu Glu Thr Ser
65   70   75   80
Ala Leu Asp Ser Thr Asn Val Glu Leu Ala Phe Glu Thr Val Leu Lys

3596

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                    85                    90                    95
    Glu Ile Phe Ala Lys Val Ser Lys Gln Arg Gln Asn Ser Ile Arg Thr
                    100                   105                   110
    Asn Ala Ile Thr Leu Gly Ser Ala Gln Ala Gly Gln Glu Pro Gly Pro
                    115                   120                   125
    Gly Glu Lys Arg Ala Cys Cys Ile Ser Leu
            130                   135
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<210> 4407
<211> 974
<212> DNA
<213> Homo sapiens

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120
ttctctgtag tccttgagca gccatttgac caaataaatt taattttata atcaataaaa
180
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240
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300
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<210> 4408
<211> 158
<212> PRT
<213> Homo sapiens
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<400> 4408
Arg Met Phe Asp Val Gly Gly Gln Arg Ser Glu Arg Lys Lys Trp Ile
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His Cys Phe Glu Gly Val Thr Cys Ile Ile Phe Cys Ala Ala Leu Ser
                20   25   30
Ala Tyr Asp Met Val Leu Val Glu Asp Glu Glu Val Asn Arg Met His
            35   40   45
Glu Ser Leu His Leu Phe Asn Ser Ile Cys Asn His Lys Tyr Phe Ser
        50   55   60
Thr Thr Ser Ile Val Leu Phe Leu Asn Lys Lys Asp Ile Phe Gln Glu
65   70   75   80
Lys Val Thr Lys Val His Leu Ser Ile Cys Phe Pro Glu Tyr Thr Gly
                85   90   95
Pro Asn Thr Phe Glu Asp Ala Gly Asn Tyr Ile Lys Asn Gln Phe Leu
            100   105   110
Asp Leu Asn Leu Lys Lys Glu Asp Lys Glu Ile Tyr Ser His Met Thr
            115   120   125
Cys Ala Thr Asp Thr Gln Asn Val Lys Phe Val Phe Asp Ala Val Thr
        130   135   140
Asp Ile Ile Ile Lys Glu Asn Leu Lys Asp Cys Gly Leu Phe
145   150   155

<210> 4409
<211> 4217
<212> DNA
<213> Homo sapiens

<400> 4409
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780

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4020
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caggtgtgtg ttgagaccat tgacaactgc tcgtgtacag gcaccccaca gccccagagc
4140
atggggcaca gcaggcatgc gagtgagagg atgaagggga ataaagtcag tacaactcgt
4200
aaaaaaaaaa aaaaaaa
4217
```

```
<210> 4410
<211> 405
<212> PRT
<213> Homo sapiens
```

```
<400> 4410
Glu Ser Ser Glu Glu Glu Glu Gly Glu Glu Gly Glu Ala Gly Gly Lys
 1               5                  10                  15
Gln Gly Pro Arg Gly Ser Arg Ser Ser Arg Ala Asp Pro Pro Pro His
            20                  25                  30
Ser His Met Ala Thr Arg Ser Arg Glu Asn Ala Arg Arg Arg Gly Thr
            35                  40                  45
Pro Glu Pro Glu Glu Ala Gly Arg Arg Gly Gly Lys Arg Pro Lys Pro
      50                  55                  60
Pro Pro Gly Val Ala Ser Ala Ser Ala Arg Gly Pro Pro Ala Thr Asp
65                  70                  75                  80
Gly Leu Gly Ala Lys Val Lys Leu Glu Glu Lys Gln His His Pro Cys
                  85                  90                  95
Gln Lys Cys Pro Arg Val Phe Asn Asn Arg Trp Tyr Leu Glu Lys His
                 100                 105                 110
Met Asn Val Thr His Ser Arg Met Gln Ile Cys Asp Gln Cys Gly Lys
            115                 120                 125
Arg Phe Leu Leu Glu Ser Glu Leu Leu Leu His Arg Gln Thr Asp Cys
      130                 135                 140
Glu Arg Asn Ile Gln Cys Val Thr Cys Gly Lys Ala Phe Lys Lys Leu
145                 150                 155                 160
Trp Ser Leu His Glu His Asn Lys Ile Val His Gly Tyr Ala Glu Lys
                 165                 170                 175
Lys Phe Ser Cys Glu Ile Cys Glu Lys Lys Phe Tyr Thr Met Ala His
            180                 185                 190
Val Arg Lys His Met Val Ala His Thr Lys Asp Met Pro Phe Thr Cys
      195                 200                 205
Glu Thr Cys Gly Lys Ser Phe Lys Arg Ser Met Ser Leu Lys Val His
      210                 215                 220
Ser Leu Gln His Ser Gly Glu Lys Pro Phe Arg Cys Glu Asn Cys Asp
225                 230                 235                 240
Glu Arg Phe Gln Tyr Lys Tyr Gln Leu Arg Ser His Met Ser Ile His
                 245                 250                 255
Ile Gly His Lys Gln Phe Met Cys Gln Trp Cys Gly Lys Asp Phe Asn
            260                 265                 270
Met Lys Gln Tyr Phe Asp Glu His Met Lys Thr His Thr Gly Glu Lys
            275                 280                 285
Pro Phe Ile Cys Glu Ile Cys Gly Lys Ser Phe Thr Ser Arg Pro Asn
      290                 295                 300
Met Lys Arg His Arg Arg Thr His Thr Gly Glu Lys Pro Tyr Pro Cys
```

```
305                    310                    315                    320
Asp Val Cys Gly Gln Arg Phe Arg Phe Ser Asn Met Leu Lys Ala His
                    325                    330                    335
Lys Glu Lys Cys Phe Arg Val Ser His Thr Leu Ala Gly Asp Gly Val
                340                    345                    350
Pro Ala Ala Pro Gly Leu Pro Pro Thr Gln Pro Gln Ala His Ala Leu
            355                    360                    365
Pro Leu Leu Pro Gly Leu Pro Gln Thr Leu Pro Pro Pro Pro His Leu
        370                    375                    380
Pro Pro Pro Pro Pro Leu Phe Pro Thr Thr Ala Ser Pro Gly Gly Arg
385                    390                    395                    400
Met Asn Ala Asn Asn
                405
```

```
<210> 4411
<211> 484
<212> DNA
<213> Homo sapiens

<400> 4411
cccaaggcag cagcaggctt gccaggtggg aaggaccaga aggcagccca gcggtgggga
60
gtgtggagtg aatggggctg aaagggtagg gctggcccac agagggtggg gaggctgcag
120
caaaagagga gtttagggtg gctatggtgc aggggcagct gtatgcttca cctcaaatgt
180
tactgtcttc tctctccatc aaggaggaag ggcccaggct ggggttagga gggctagggg
240
cccaggctgt gtgtcccctt ttttcctcct ggtgccctgc cccccacgc tgtcatctcc
300
ctcagtggca gtgggggttc atcactgggt cttcaggtcc cttgcccatg gctggtggtg
360
ttccaggtgg gcccaaccag gcggccctg cctctaggca gcgcgtaggt ttccttgggc
420
agcctcaatc ctgccagcgc cagcatgtct ccctgcacag aagccatcaa gcacctttgg
480
atcc
484
```

```
<210> 4412
<211> 113
<212> PRT
<213> Homo sapiens

<400> 4412
Met Val Gln Gly Gln Leu Tyr Ala Ser Pro Gln Met Leu Leu Ser Ser
  1                5                    10                    15
Leu Ser Ile Lys Glu Glu Gly Pro Arg Leu Gly Leu Gly Gly Leu Gly
                20                    25                    30
Ala Gln Ala Val Cys Pro Leu Phe Ser Ser Trp Cys Pro Ala Pro Pro
            35                    40                    45
Arg Cys His Leu Pro Gln Trp Gln Trp Gly Phe Ile Thr Gly Ser Ser
        50                    55                    60
Gly Pro Leu Pro Met Ala Gly Gly Val Pro Gly Gly Pro Asn Gln Ala
```

```
65                       70                       75                       80
Ala Pro Ala Ser Arg Gln Arg Val Gly Phe Leu Gly Gln Pro Gln Ser
                    85                       90                       95
Cys Gln Arg Gln His Val Ser Leu His Arg Ser His Gln Ala Pro Leu
                100                      105                      110
Asp
```

```
<210> 4413
<211> 1097
<212> DNA
<213> Homo sapiens

<400> 4413
atggcgctgc ttttttgcacg ttcttttgcgc ttgtgccgct ggggagccaa acgattggga
60
gttgcctcca cagagcgcca gagaggcgtc agtttcaaac tggaagaaaa aaccgcccac
120
agcagcctgg cactcttcag agatgatacg ggtgtcaaat atggcttggt gggattggag
180
cccaccaagg tgccttgaat gtggagcgct tccgggagtt ggcaggtgct ggcagacaca
240
gcggtcacca gtggcagaca ctactgggaa gtgacagtga agcgctccca gcagttccgg
300
ataggagtgg cagatgtgga catgtcccgg gatagctgca ttggtgttga tgatcgttcc
360
tgggtgttca cctatgccca gcgcaagtgg tacaccatgt tggccaacga gaaagcccca
420
gttgagggta ttgggcagcc agagaaggtg gggctgttgc tggagtatga ggcccagaag
480
ctgagcctgg tggatgtgag ccaggtctct gtggttcaca cgctacagac agatttccgg
540
ggtccagtgg tgcctgcctt tgctctctgg gatggggagc tgctgaccca ttcagggctt
600
gaggtgcccg agggcctcta gtatgtccat tactggagtc cctaatcacg cctttggcca
660
gcctcctttt gaaagtgtcc gaagcctttt actttgcct caagcaacct ctagctccca
720
caattcagtg ttgggtcctc tgtgcaatat catgatcatc ttcctcatcc cctaccttgt
780
gaaagctagg catacagcca aaccctcctt ttccccaccc accaactact gccaatttcc
840
taggctacca tgggtgtatc ttccttgacc tgcttccttc agtccctctg cctcccttttg
900
cccaggcctt tctcagactg tattccatcc tggggtctta tcattcagct ttgtttgaat
960
ttattaatca ccatgatacc tctccctccc tttgtccaca tgtaacttgt tcttggggct
1020
ctaccagatg gctgaagagt aaatcctttc tacctctggc tgaaaaaaaa aaaaaaaaaa
1080
aaaaaaaaaa aaaaaaa
1097
```

```
<210> 4414
```

```
<211> 65
<212> PRT
<213> Homo sapiens

<400> 4414
Met Ala Leu Leu Phe Ala Arg Ser Leu Arg Leu Cys Arg Trp Gly Ala
 1               5                  10                  15
Lys Arg Leu Gly Val Ala Ser Thr Glu Arg Gln Arg Gly Val Ser Phe
            20                  25                  30
Lys Leu Glu Glu Lys Thr Ala His Ser Ser Leu Ala Leu Phe Arg Asp
        35                  40                  45
Asp Thr Gly Val Lys Tyr Gly Leu Val Gly Leu Glu Pro Thr Lys Val
    50                  55                  60
Pro
65


<210> 4415
<211> 775
<212> DNA
<213> Homo sapiens

<400> 4415
taaaaggaaa acagtgtctt tattgtgtgt agttctaaca aacgttcact gtgtgcgcat
60
tccagcagaa agagacaaag atctttgttc aaaatattct gaaaaaggta aactaactgc
120
attattgaat acacaaaagg aatgttaccg ttacttgttc atagtcaaag gtgaagttaa
180
aaaaaaaggg aagttaaata actgaagtaa tggtttgccc aaatagcaaa cgtaggatac
240
aggcgtgggc aaagagcagc tactgaagct catgaggagg atgctggata tagggtaggt
300
aacttgacaa atgcctctgc ttctttggaa ccttcttcct agatcacccc cacaaattcc
360
aaacctggct ctttcagagc acaacagcca aatgtaacta aactcctcat tacttctgtg
420
atatttggca acagaatgag atagtttaaa aaaaaatcaa tttcttgttg agacaagaca
480
tgtctgaatc catttctctt ggggtaggag gaggtaatga acattaacgt tctgcatctc
540
aatctcctaa aatggaattt aaccagatag atatcgcttg agattttaaa gcaggagata
600
ccataagtaa tgatactcca ggcctgtaaa gcatttttca ttgtcccaca ttgcagctaa
660
atgagtataa actcgacagt gttctgattt cacaacatat gcatttatga caactgctaa
720
aacaacttta caggctcaaa cgataggttc caagggattt ttgttttttgc ttaag
775


<210> 4416
<211> 100
<212> PRT
<213> Homo sapiens
```

```
<400> 4416
Met Lys Asn Ala Leu Gln Ala Trp Ser Ile Ile Thr Tyr Gly Ile Ser
1               5               10              15
Cys Phe Lys Ile Ser Ser Asp Ile Tyr Leu Val Lys Phe His Phe Arg
            20              25              30
Arg Leu Arg Cys Arg Thr Leu Met Phe Ile Thr Ser Ser Tyr Pro Lys
        35              40              45
Arg Asn Gly Phe Arg His Val Leu Ser Gln Gln Glu Ile Asp Phe Phe
    50              55              60
Leu Asn Tyr Leu Ile Leu Leu Pro Asn Ile Thr Glu Val Met Arg Ser
65              70              75              80
Leu Val Thr Phe Gly Cys Cys Ala Leu Lys Glu Pro Gly Leu Glu Phe
                85              90              95
Val Gly Val Ile
            100


<210> 4417
<211> 980
<212> DNA
<213> Homo sapiens


<400> 4417
nnacgcgtga gggaaaagca gaggcagttg gaggtagcgc aagttgaaaa ccagctgcta
60
aaaatgaagg tggaatcgtc ccaagaagcc aatgctgagg tgatgcgaga gatgaccaag
120
aagctgtaca gccagtatga ggagaagctg caggaagaac agaggaagca cagtgctgag
180
aaggaggctc ttttggaaga aaccaatagt tttctgaaag cgattgaaga agccaataaa
240
aagatgcaag cagcagagat cagcctagag gagaaagacc agaggatcgg ggagctggac
300
aggctgattg agcgcatgga aaaggaacgt catcaactgc aacttcaact cctagaacat
360
gaaacagaaa tgtctgggga gttaactgat tctgacaagg aaaggtatca gcagttggag
420
gaggcatcag ccagcctccg tgagcggatc agacacctag atgacatggt gcattgccag
480
cagaagaaag tcaagcagat ggttgaggag attgagtcat taaagaaaaa agtgcaacag
540
aagcagctcc tgatactgca gcttttagaa aaaatctctt tcctggaagg agagaataat
600
gaactacaaa gcaggttgga ctatttgaca gaaacccagg ccaagactga gtggaaaca
660
agagaaattg gagtgggctg tgatcttctt cccagcccaa caggcaggac tcgtgaaatt
720
gtgatgcctt ctaggaacta caccccatac acaagagtcc tggagttatc ctcaaagaaa
780
acgctgactt aggcactcag aggcatacac tttttacaga tggacaaaag ctctggaacc
840
ctgtggcttc aaatcctttg ggaagggtga ctgttgtttc ccctacacac agtgtaagcc
900
ggaatgggaa tcgctgaggc tctgatccac ttctaagaca ggaaggaaag tgaaggcaga
960
```

gtgagcaggt aagagaggga
980

<210> 4418
<211> 263
<212> PRT
<213> Homo sapiens

<400> 4418
Xaa Arg Val Arg Glu Lys Gln Arg Gln Leu Glu Val Ala Gln Val Glu
 1   5   10   15
Asn Gln Leu Leu Lys Met Lys Val Glu Ser Ser Gln Glu Ala Asn Ala
            20   25   30
Glu Val Met Arg Glu Met Thr Lys Lys Leu Tyr Ser Gln Tyr Glu Glu
        35   40   45
Lys Leu Gln Glu Glu Gln Arg Lys His Ser Ala Glu Lys Glu Ala Leu
    50   55   60
Leu Glu Glu Thr Asn Ser Phe Leu Lys Ala Ile Glu Glu Ala Asn Lys
65   70   75   80
Lys Met Gln Ala Ala Glu Ile Ser Leu Glu Glu Lys Asp Gln Arg Ile
                85   90   95
Gly Glu Leu Asp Arg Leu Ile Glu Arg Met Glu Lys Glu Arg His Gln
            100   105   110
Leu Gln Leu Gln Leu Leu Glu His Glu Thr Glu Met Ser Gly Glu Leu
        115   120   125
Thr Asp Ser Asp Lys Glu Arg Tyr Gln Gln Leu Glu Glu Ala Ser Ala
    130   135   140
Ser Leu Arg Glu Arg Ile Arg His Leu Asp Asp Met Val His Cys Gln
145   150   155   160
Gln Lys Lys Val Lys Gln Met Val Glu Glu Ile Glu Ser Leu Lys Lys
                165   170   175
Lys Val Gln Gln Lys Gln Leu Leu Ile Leu Gln Leu Leu Glu Lys Ile
            180   185   190
Ser Phe Leu Glu Gly Glu Asn Asn Glu Leu Gln Ser Arg Leu Asp Tyr
        195   200   205
Leu Thr Glu Thr Gln Ala Lys Thr Glu Val Glu Thr Arg Glu Ile Gly
    210   215   220
Val Gly Cys Asp Leu Leu Pro Ser Pro Thr Gly Arg Thr Arg Glu Ile
225   230   235   240
Val Met Pro Ser Arg Asn Tyr Thr Pro Tyr Thr Arg Val Leu Glu Leu
                245   250   255
Ser Ser Lys Lys Thr Leu Thr
                260

<210> 4419
<211> 369
<212> DNA
<213> Homo sapiens

<400> 4419
ngaattcctt gtatcgaaag tgccagaata catactattt attatgtatt tattctaaga
60
cagggtcttg ctctgntcac ccaggctgga gtgcagtggt gcgatcttgg ctcactgcaa
120

```
cctccgcctc cccagctcaa gcaactctcc tgccccagcc acccaagtnn aaattacagg
180
cccgtgccac cacacccggc caatttctgt atttttagta gagacggggt ttcaccatat
240
tggccaggac ggtctcaaac tcctggcccc atgtgatcct cccaccttgg cctcccaagg
300
tgctggtatt acaggcgtga gccaccactg cgcctggcca gattttgctc ttttttgagc
360
agtctcagn
369
```

```
<210> 4420
<211> 91
<212> PRT
<213> Homo sapiens
```

```
<400> 4420
Xaa Ile Pro Cys Ile Glu Ser Ala Arg Ile His Thr Ile Tyr Tyr Val
 1               5                  10                  15
Phe Ile Leu Arg Gln Gly Leu Ala Leu Xaa Thr Gln Ala Gly Val Gln
            20                  25                  30
Trp Cys Asp Leu Gly Ser Leu Gln Pro Pro Pro Gln Leu Lys Gln
         35                  40                  45
Leu Ser Cys Pro Ser His Pro Ser Xaa Asn Tyr Arg Pro Val Pro Pro
      50                  55                  60
His Pro Ala Asn Phe Cys Ile Phe Ser Arg Asp Gly Val Ser Pro Tyr
65                  70                  75                  80
Trp Pro Gly Arg Ser Gln Thr Pro Gly Pro Met
               85                  90
```

```
<210> 4421
<211> 1356
<212> DNA
<213> Homo sapiens
```

```
<400> 4421
nctggcagag tgtgagggaa gaggcgctaa tcccttttccc atctggcctg gcctctcggg
60
tgtggacacc aaatcccgca ggggttgctg tagctatgcc cgtgggcatc cttgccctgg
120
ctggggtgtg ctagagagag gaaagctgga ggaggagagc tgagctggtg gttaccccat
180
gccaggaggg ccaaggcaag aagcctgcag ccccagagat actgaccctg tcccctgccc
240
tccagggcac aactgaacta acggaatggc ttaatcagat agctcgagaa ctgccactac
300
cactccctcc ctgcccactc ctcccaaagt ccacctgttc ccgcaagagt cccacctcac
360
aagcaaccac cagaggctga tacaaatggc cgctgtattt ttgctaaagt gacagtgaca
420
cagataaggc aaagagctga ggggcaggac acatcagatg gaaggggga ccgtgcaa
480
aatggcagtc taacagaaaa tcatccttgt accaacagcc ccttccctcc caagttaggt
540
```

gagcccttgg gccagtgtat gggcagaaaa gcagatttgt gtccttcaga agggaaatgt
600
aaaaaggtga aagctctagt tgaagggcag tgagaggggc tggagtggga gagaaggtct
660
ctcctggccg gtggtctggg tgcagcaagg gcactctgag aaggcagaat ggaaacgcag
720
ggctggaggg gcatgggtac aggtttgggg gctctttcca gcctctacta tgttgccccc
780
ttccccaaag cccttacagg ggcagaagca cattccccgt gaccctgagt ctggcctcat
840
ttgggaagtc ttctggggtg tatggatgcc tgtgtgtgtg agtgagatgg gtggggggcc
900
acggctatct ggctctagca cactcatggg agaccagctc tgggaacaac aggatggggt
960
gctgggatgg gggtttaaga ggtctctgct agatatttct gaactgacct ccccaggtgc
1020
ccaacctggc cttgggaaga gagtgcctag ggcagcgggg atggaaaccc ttgcctgcag
1080
cataggtcca ggcctcatgg ccctacacct tgacctcttg actttgttgc cctggcctta
1140
agtacaaaga ttcctcactg cgtgctaaga aaacagatcc cgggccgggc ccggttgctc
1200
acacctataa tcccagcact ttggaaggct gaggcgggtg aatcacctga gatcaggagt
1260
tcgagaccag cctggccaac atggcaaaac cctgtctcta ctaaaaacac aaaaatttgc
1320
cgggcatggt ggcagatgcc tgtaatccca gctact
1356

<210> 4422
<211> 58
<212> PRT
<213> Homo sapiens

<400> 4422
Gly Arg Ala Arg Leu Leu Thr Pro Ile Ile Pro Ala Leu Trp Lys Ala
 1   5   10   15
Glu Ala Gly Glu Ser Pro Glu Ile Arg Ser Ser Arg Pro Ala Trp Pro
            20   25   30
Thr Trp Gln Asn Pro Val Ser Thr Lys Asn Thr Lys Ile Cys Arg Ala
        35   40   45
Trp Trp Gln Met Pro Val Ile Pro Ala Thr
    50   55

<210> 4423
<211> 2673
<212> DNA
<213> Homo sapiens

<400> 4423
tccggaagtg gcttctgcga caacatgctt gcggacctcg gcttaatcgg aaccataggc
60
gaggatgacg aggtgccggt ggagcccgag tctgactccg gggacgagga agaggagggg
120

3608

cccattgtgc tgggcagacg acaaaaagct ttggggaaga accgcagtgc tgatttcaac
180
cctgatttcg ttttcactga gaaggagggg acgtacgatg gcagctgggc cctggctgat
240
gtcatgagcc aactcaagaa gaagagggca gccactacat tagatgagaa gattgagaaa
300
gttcgaaaga aaaggaaaac agaggataaa gaagccaagt ctgggaagtt ggaaaaggag
360
aaagaagcaa aggaaggctc tgaaccaagg gagcaggaag accttcaaga gaatgatgag
420
gaaggctcag aagatgaagc ctcggagact gactactcat cagctgatga gaacatcctc
480
accaaagcag atacactcaa agtaaaggat cggaagaaga agaagaagaa aggacaggaa
540
gcaggaggat tttttgaaga tgcatctcag tacgatgaaa acctctcgtt ccaggacatg
600
aacctttccc gccctcttct gaaggccatt acagccatgg gcttcaagca gcccaccccg
660
atccagaagg cgtgcatacc tgtgggtcta ttggggaagg acatctgtgc ctgtgcagcc
720
actgggacag gtaaaactgc cgcctttgcc ctgcctgttt tggagcgtct gatttataaa
780
ccccgccagg ctccagtcac ccgcgtgctg gtgctagtgc ccacccgaga gctgggcatc
840
caggtgcact ctgtcaccag acagctggcc cagttctgca acatcaccac ctgcctggct
900
gtgggcggct tggatgtgaa gtctcaggaa gcagctcttc gggcagcgcc tgacatcctc
960
atcgccaccc caggccggct catcgatcac ctccacaact gcccttcctt ccacctgagc
1020
agcatcgagg tgctcatcct ggacgaggct gacaggatgc tggatgagta ctttgaggag
1080
cagatgaagg agatcatccg aatgtgttcc caccaccgcc agaccatgct cttctcggcc
1140
accatgacag acgaggtgaa agatctggct tctgtctcct tgaagaatcc tgtccggata
1200
tttgtgaaca gcaacacaga tgtggctccc ttcctgcggc aggagttcat ccggatccgg
1260
cctaatcgtg aaggagaccg ggaagccatc gtggcagctt tgttgacgag gaccttcact
1320
gaccatgtga tgctgttcac gcaaaccaag aagcaggccc accgcatgca catcctcctg
1380
gggctcatgg ggctgcaggt gggtgagctc catggcaact gtcacagac gcagcggctg
1440
gaggccctcc ggcgttttaa ggatgaacag attgacatcc tcgtggccac tgatgtggca
1500
gcccgtggac ttgacattga gggggtcaaa acggtaatca acttcacaat gcctaatacc
1560
atcaaacatt atgtccaccg ggtggggcga acagcacgtg ctggcagggc tgggcgctca
1620
gtctctctgg tgggagaaga tgagcggaag atgctgaagg agattgtaaa agctgccaag
1680
gcccctgtga aggccaggat acttccccaa gatgtcatcc tcaaattccg ggacaagatt
1740

gagaaaatgg agaaagatgt gtatgcagtt ctgcagctag aggcggagga aaaagagatg
1800
cagcagtcag aagcccagat caatacagca aagcggctcc tggagaaggg gaaggaggca
1860
gtggtccaag agcccgagag gagctggttc cagaccaaag aagagaggaa gaaggagaaa
1920
attgccaaag ctctgcagga atttgacttg gccttaagag gaaagaagaa aaggaagaag
1980
tttatgaagg atgccaaaaa aaaggggggag atgacagcag aggaaaggtc tcagtttgaa
2040
atcctcaagg cgcagatgtt tgctgaacgg ctagcgaaga ggaatcgcag agccaagcgg
2100
gcccgagcaa tgcccgagga ggagccagtg agaggtcctg ccaagaagca aaagcagggg
2160
aagaaatctg tatttgatga agaactcacc aacacaagca agaaggccct gaaacagtat
2220
cgagctggcc cttcctttga agaaaggaaa cagttgggct tgccccacca gagacgagga
2280
ggaaacttta aatctaaatc caggtgatac tggctgtttt ggaggggcac atgttttggg
2340
attagagata aaaacctttc atggaaaaga agcttctcca tcctcattct ggtcttaact
2400
ctgattttct tacagataca agaggaggaa gtagctgtcg tggcctgaag aaattcatgg
2460
gggcagccct taaatccctt ccctgtggga agtcatcctg gctggtctgt cttttctcca
2520
tttgtttaaa aaaaaaacaa aaacaaaaaa caacactttg gtgtggtggt atggtacgta
2580
gctattttcc taagcatgtc tgtcaatctc ccttcttgct gattagcttt catatgacta
2640
tattaaatgg aagtattttt gggaaaagag aaa
2673

<210> 4424
<211> 768
<212> PRT
<213> Homo sapiens

<400> 4424
Ser Gly Ser Gly Phe Cys Asp Asn Met Leu Ala Asp Leu Gly Leu Ile
1   5   10   15
Gly Thr Ile Gly Glu Asp Asp Glu Val Pro Val Glu Pro Glu Ser Asp
            20   25   30
Ser Gly Asp Glu Glu Glu Glu Gly Pro Ile Val Leu Gly Arg Arg Gln
        35   40   45
Lys Ala Leu Gly Lys Asn Arg Ser Ala Asp Phe Asn Pro Asp Phe Val
    50   55   60
Phe Thr Glu Lys Glu Gly Thr Tyr Asp Gly Ser Trp Ala Leu Ala Asp
65   70   75   80
Val Met Ser Gln Leu Lys Lys Lys Arg Ala Ala Thr Thr Leu Asp Glu
                85   90   95
Lys Ile Glu Lys Val Arg Lys Lys Arg Lys Thr Glu Asp Lys Glu Ala
            100   105   110
Lys Ser Gly Lys Leu Glu Lys Glu Lys Glu Ala Lys Glu Gly Ser Glu

```
              115                    120                      125
Pro Arg Glu Gln Glu Asp Leu Gln Glu Asn Asp Glu Glu Gly Ser Glu
          130                    135                  140
Asp Glu Ala Ser Glu Thr Asp Tyr Ser Ser Ala Asp Glu Asn Ile Leu
145                      150                  155                  160
Thr Lys Ala Asp Thr Leu Lys Val Lys Asp Arg Lys Lys Lys Lys Lys
                  165                    170                  175
Lys Gly Gln Glu Ala Gly Gly Phe Phe Glu Asp Ala Ser Gln Tyr Asp
              180                    185                  190
Glu Asn Leu Ser Phe Gln Asp Met Asn Leu Ser Arg Pro Leu Leu Lys
          195                    200                  205
Ala Ile Thr Ala Met Gly Phe Lys Gln Pro Thr Pro Ile Gln Lys Ala
      210                    215                  220
Cys Ile Pro Val Gly Leu Leu Gly Lys Asp Ile Cys Ala Cys Ala Ala
225                    230                    235                  240
Thr Gly Thr Gly Lys Thr Ala Ala Phe Ala Leu Pro Val Leu Glu Arg
                  245                    250                  255
Leu Ile Tyr Lys Pro Arg Gln Ala Pro Val Thr Arg Val Leu Val Leu
              260                    265                  270
Val Pro Thr Arg Glu Leu Gly Ile Gln Val His Ser Val Thr Arg Gln
          275                    280                  285
Leu Ala Gln Phe Cys Asn Ile Thr Thr Cys Leu Ala Val Gly Gly Leu
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Ile Ala Thr Pro Gly Arg Leu Ile Asp His Leu His Asn Cys Pro Ser
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Phe His Leu Ser Ser Ile Glu Val Leu Ile Leu Asp Glu Ala Asp Arg
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Cys Ser His His Arg Gln Thr Met Leu Phe Ser Ala Thr Met Thr Asp
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Ile Arg Ile Arg Pro Asn Arg Glu Gly Asp Arg Glu Ala Ile Val Ala
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Ala Leu Leu Thr Arg Thr Phe Thr Asp His Val Met Leu Phe Thr Gln
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Lys Arg Lys Lys Phe Met Lys Asp Ala Lys Lys Lys Gly Glu Met Thr
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<212> DNA
<213> Homo sapiens

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<213> Homo sapiens


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Asn Asn Pro Thr Lys Glu Asp Leu Gly Lys Leu Gln Pro Leu Val Ala
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Ser Tyr Leu Cys Ser Asp Val Thr Ser Val Pro Ser Lys Glu Ser Leu
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Lys Leu Gln Gly Val Phe Ser Lys Gln Thr Val Leu Lys Ser His Pro
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Leu Leu Ser Gln Ser Tyr Glu Leu Arg Ala Glu Leu Leu Gly Arg Gln
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Pro Val Leu Glu Phe Ser Leu Glu Asn Leu Arg Thr Met Asn Thr Ser
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Gly Gln Thr Ala Leu Pro Gln Ala Pro Val Asn Gly Leu Ala Lys Lys
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Leu Thr Lys Ser Ser Thr His Ser Asp His Asp Asn Ser Thr Ser Leu
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Asn Gly Gly Lys Arg Ala Leu Thr Ser Ser Ala Leu His Gly Gly Glu
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Met Gly Gly Ser Glu Ser Gly Asp Leu Lys Gly Gly Met Thr Asn Cys
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Thr Leu Pro His Arg Ser Leu Asp Val Glu His Thr Thr Leu Tyr Ser
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Arg Ser Glu Trp Lys Trp Ala Ala Asp Arg Ala Ala Ile Val Ser Arg
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Val Leu Gly Glu Val Pro Pro Glu His Thr Thr Asp Leu Phe Leu
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Pro Leu Ser Ser Glu Val Lys Thr Asp His Gly Thr Asp Lys Leu Ile
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Trp Gln Asn Lys Pro Phe Asp Lys Ile Lys Pro Pro Lys Lys Leu Ser
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Lys Asp Arg His Lys Leu Val Ser Ser Phe Leu Thr Thr Ala Lys Leu
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Ser His His Gln Thr Arg Pro Asp Arg Thr His Arg Gln His Leu Asp
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His His Thr Asp Met Ser Ser Ser Ser Tyr Leu Ala Ala Thr His His
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Pro Ala Pro Ala Ser Ser Ser Ser Gln Val Thr Ala Ser Thr Ser Gln
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Gln Pro Val Arg Arg Arg Arg Gly Glu Ser Ser Phe Asp Ile Asn Asn
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Ile Ser Pro Glu Leu His Ser Ala Pro Leu Thr Pro Val Ala Arg Asp
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3619

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3120
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3300
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3540
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3660
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3720
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tcgatggctt cgtggtggag gtctggaacc agctgctaag ccagaagcgc gtgggcctca
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3900
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4320
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4440
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4474

<210> 4428
<211> 763
<212> PRT
<213> Homo sapiens

<400> 4428
Met Val Ala Cys Arg Ala Ile Gly Ile Leu Ser Arg Phe Ser Ala Phe
1   5   10   15
Arg Ile Leu Arg Ser Arg Gly Tyr Ile Cys Arg Asn Phe Thr Gly Ser
            20   25   30
Ser Ala Leu Leu Thr Arg Thr His Ile Asn Tyr Gly Val Lys Gly Asp
        35   40   45
Val Ala Val Val Arg Ile Asn Ser Pro Asn Ser Lys Val Asn Thr Leu
    50   55   60
Ser Lys Glu Leu His Ser Glu Phe Ser Glu Val Met Asn Glu Ile Trp
65   70   75   80
Ala Ser Asp Gln Ile Arg Ser Ala Val Leu Ile Ser Ser Lys Pro Gly
                85   90   95
Cys Phe Ile Ala Gly Ala Asp Ile Asn Met Leu Ala Ala Cys Lys Thr
            100   105   110
Leu Gln Glu Val Thr Gln Leu Ser Gln Glu Ala Gln Arg Ile Val Glu
        115   120   125
Lys Leu Glu Lys Ser Thr Lys Pro Ile Val Ala Ala Ile Asn Gly Ser
    130   135   140
Cys Leu Gly Gly Gly Leu Glu Val Ala Ile Ser Cys Gln Tyr Arg Ile
145   150   155   160
Ala Thr Lys Asp Arg Lys Thr Val Leu Gly Thr Pro Glu Val Leu Leu

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                    165                 170                 175
Gly Ala Leu Pro Gly Ala Gly Gly Thr Gln Arg Leu Pro Lys Met Val
            180                 185                 190
Gly Val Pro Ala Ala Leu Asp Met Met Leu Thr Gly Arg Ser Ile Arg
        195                 200                 205
Ala Asp Arg Ala Lys Lys Met Gly Leu Val Asp Gln Leu Val Glu Pro
    210                 215                 220
Leu Gly Pro Gly Leu Lys Pro Pro Glu Glu Arg Thr Ile Glu Tyr Leu
225                 230                 235                 240
Glu Glu Val Ala Ile Thr Phe Ala Lys Gly Leu Ala Asp Lys Lys Ile
                245                 250                 255
Ser Pro Lys Arg Asp Lys Gly Leu Val Glu Lys Leu Thr Ala Tyr Ala
                260                 265                 270
Met Thr Ile Pro Phe Val Arg Gln Gln Val Tyr Lys Lys Val Glu Glu
            275                 280                 285
Lys Val Arg Lys Gln Thr Lys Gly Leu Tyr Pro Ala Pro Leu Lys Ile
        290                 295                 300
Ile Asp Val Val Lys Thr Gly Ile Glu Gln Gly Ser Asp Ala Gly Tyr
305                 310                 315                 320
Leu Cys Glu Ser Gln Lys Phe Gly Glu Leu Val Met Thr Lys Glu Ser
            325                 330                 335
Lys Ala Leu Met Gly Leu Tyr His Gly Gln Val Leu Cys Lys Lys Asn
            340                 345                 350
Lys Phe Gly Ala Pro Gln Lys Asp Val Lys His Leu Ala Ile Leu Gly
        355                 360                 365
Ala Gly Leu Met Gly Ala Gly Ile Ala Gln Val Ser Val Asp Lys Gly
    370                 375                 380
Leu Lys Thr Ile Leu Lys Asp Ala Thr Leu Thr Ala Leu Asp Arg Gly
385                 390                 395                 400
Gln Gln Gln Val Phe Lys Gly Leu Asn Asp Lys Val Lys Lys Lys Ala
            405                 410                 415
Leu Thr Ser Phe Glu Arg Asp Ser Ile Phe Ser Asn Leu Thr Gly Gln
        420                 425                 430
Leu Asp Tyr Gln Gly Phe Glu Lys Ala Asp Met Val Ile Glu Ala Val
        435                 440                 445
Phe Glu Asp Leu Ser Leu Lys His Arg Val Leu Lys Glu Val Glu Ala
    450                 455                 460
Val Ile Pro Asp His Cys Ile Phe Ala Ser Asn Thr Ser Ala Leu Pro
465                 470                 475                 480
Ile Ser Glu Ile Ala Ala Val Ser Lys Arg Pro Glu Lys Val Ile Gly
            485                 490                 495
Met His Tyr Phe Ser Pro Val Asp Lys Met Gln Leu Leu Glu Ile Ile
        500                 505                 510
Thr Thr Glu Lys Thr Ser Lys Asp Thr Ser Ala Ser Ala Val Ala Val
        515                 520                 525
Gly Leu Lys Gln Gly Lys Val Ile Ile Val Val Lys Asp Gly Pro Gly
    530                 535                 540
Phe Tyr Thr Thr Arg Cys Leu Ala Pro Met Met Ser Glu Val Ile Arg
545                 550                 555                 560
Ile Leu Gln Glu Gly Val Asp Pro Lys Lys Leu Asp Ser Leu Thr Thr
            565                 570                 575
Ser Phe Gly Phe Pro Val Gly Ala Ala Thr Leu Val Asp Glu Val Gly
        580                 585                 590
Val Asp Val Ala Lys His Val Ala Glu Asp Leu Gly Lys Val Phe Gly
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              595                      600                      605
Glu Arg Phe Gly Gly Gly Asn Pro Glu Leu Leu Thr Gln Met Val Ser
        610                      615                  620
Lys Gly Phe Leu Gly Arg Lys Ser Gly Lys Gly Phe Tyr Ile Tyr Gln
625                      630                      635                  640
Glu Gly Val Lys Arg Lys Asp Leu Asn Ser Asp Met Asp Ser Ile Leu
                645                      650                  655
Ala Ser Leu Lys Leu Pro Pro Lys Ser Glu Val Ser Ser Asp Glu Asp
                660                      665                  670
Ile Gln Phe Arg Leu Val Thr Arg Phe Val Asn Glu Ala Val Met Cys
            675                      680                  685
Leu Gln Glu Gly Ile Leu Ala Thr Pro Ala Glu Gly Asp Ile Gly Ala
        690                      695                  700
Val Phe Gly Leu Gly Phe Pro Pro Cys Leu Gly Gly Pro Phe Arg Phe
705                      710                      715                  720
Val Asp Leu Tyr Gly Ala Gln Lys Ile Val Asp Arg Leu Lys Lys Tyr
                725                      730                  735
Glu Ala Ala Tyr Gly Lys Gln Phe Thr Pro Cys Gln Leu Leu Ala Asp
            740                      745                  750
His Ala Asn Ser Pro Asn Lys Lys Phe Tyr Gln
            755                      760
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<210> 4429
<211> 981
<212> DNA
<213> Homo sapiens

<400> 4429
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60
aatccaggca tcacttgccc ctgatttttat ttcatttttca cacactctgt ttaggagaca
120
ctgcttgctc caactggctc catctctccg ttaccggtga ggcaggcaca gtgctgcagt
180
ggcagaatgg aagtacccag gctgacttgc tctcagccag acacgacctc ttctctgagg
240
agggtgatgc caataaatgg aactccaata ggtaggcttc gctctgccct tccacaagtg
300
aacacacgcc gtgagtccct aaatcgccag gctccgcagc ctcgcagaaa gcctagtttc
360
cagacggtag gtatcccatt catcccttgg catcgggaac caaagggaat gcagacagat
420
cccggtcgtg cactacattc ccaaaccttg gcacgcacgc gaaggcttgg ggcgccccgg
480
cgcgccctttc ctccgaggcc tccaccaccc gcggactcac cactatgcga gctgaaccac
540
ctgggtgcga tgtgcagagg tagagcatcc gccagcgagg ttctgggagg cccggttacc
600
gcttcccgtt tttatggtng accgccgccg gtctcctggt aaccattgcc atgggcatag
660
gtggagtcgg acgcagaccc tccgccgccg ggcgccacta ccaccctgag gtgtccaaag
720
ccgccagcgt catcaaccag gccctgtcca tgcctgaggt cagcatcgcg cacaccaacg
780
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acacgccctt ctctctctct ctctctctct ctctctctct ctccccgtc tnnccctccc
840
gagttctccg gctctcgcgg ccggcggggc cgggcggcga acgaacgagc gagcgaacga
900
acgggcacgc gggccccgcc cgcgcacgcg ccgcgtcgcg gtggggggggt gggtgtgcgg
960
agggaagcgc gcggcggcgg c
981

<210> 4430
<211> 151
<212> PRT
<213> Homo sapiens

<400> 4430
Met Glu Val Pro Arg Leu Thr Cys Ser Gln Pro Asp Thr Thr Ser Ser
 1   5   10   15
Leu Arg Arg Val Met Pro Ile Asn Gly Thr Pro Ile Gly Arg Leu Arg
            20   25   30
Ser Ala Leu Pro Gln Val Asn Thr Arg Arg Glu Ser Leu Asn Arg Gln
            35   40   45
Ala Pro Gln Pro Arg Arg Lys Pro Ser Phe Gln Thr Val Gly Ile Pro
        50   55   60
Phe Ile Pro Trp His Arg Glu Pro Lys Gly Met Gln Thr Asp Pro Gly
65   70   75   80
Arg Ala Leu His Ser Gln Thr Leu Ala Arg Thr Arg Arg Leu Gly Ala
                85   90   95
Pro Arg Arg Ala Leu Pro Pro Arg Pro Pro Pro Ala Asp Ser Pro
            100   105   110
Leu Cys Glu Leu Asn His Leu Gly Ala Met Cys Arg Gly Arg Ala Ser
            115   120   125
Ala Ser Glu Val Leu Gly Gly Pro Val Thr Ala Ser Arg Phe Tyr Gly
        130   135   140
Xaa Pro Pro Val Ser Trp
145   150

<210> 4431
<211> 507
<212> DNA
<213> Homo sapiens

<400> 4431
ggtggcgagt tcagggaggc tttcaaggag gccagcaagg tgcctttctg caagttccac
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ctgggtgacc gacccatccc cgtcaccttc aagagggcca tcgcagcgct ctccttctgg
120
cagaaggtca ggctggcttg gggcctgtgc ttcctgtcag accccatcag gtagggctgc
180
ccccgggacc ctggccggcc tgcagggtgg tctgtgggag gctccaggcc ctcctgtgca
240
ggtccaagcg cagccaatcc tcactcaagg ccttccctgc cctttccttc cgccacaaat
300
cccaaacaaa cgtgctgtgg tccctgcccg gtgtccacag tgccagcccc accctcccag
360

cccgttgccc atccctgcgg ggctgcagcc atccctctcc acagcaagga tgacgtggaa
420
cgctgcaagc agaaggccta ctggagcaga tgatggccga gatgattggc gagttcccag
480
acctgcaccg caccatcgtt tttggag
507

<210> 4432
<211> 57
<212> PRT
<213> Homo sapiens

<400> 4432
Gly Gly Glu Phe Arg Glu Ala Phe Lys Glu Ala Ser Lys Val Pro Phe
1   5   10   15
Cys Lys Phe His Leu Gly Asp Arg Pro Ile Pro Val Thr Phe Lys Arg
            20   25   30
Ala Ile Ala Ala Leu Ser Phe Trp Gln Lys Val Arg Leu Ala Trp Gly
        35   40   45
Leu Cys Phe Leu Ser Asp Pro Ile Arg
    50   55

<210> 4433
<211> 447
<212> DNA
<213> Homo sapiens

<400> 4433
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gtgaccaaca tcaccaccgt cagcctctgg gaagaattct cctccagcga cctcgcagat
120
ctccgcttcc tggacatgag ccagaaccag ttccagtacc tgccagacgg cttcctgagg
180
aaaatgcctt ccctctccca cctgaacctc caccagaatt gcctgatgac gcttcacatt
240
cgggagcacg agccccccgg agcgctcacc gagctggacc tgagccacaa ccagctgtcg
300
gagctgcacc tggctccggg gctggccagc tgcctgggca gcctgcgctt gttcaacctg
360
agctccaacc agctcctggg cgtcccccct ggcctcttcg ccaatgctag gaacatcact
420
acacttgaca tgagccacaa tcagatc
447

<210> 4434
<211> 149
<212> PRT
<213> Homo sapiens

<400> 4434
Xaa Tyr Asn Thr Ser Ser Pro Arg Glu Met Val Ala Gln Phe Leu Leu
1   5   10   15
Val Asp Gly Asn Val Thr Asn Ile Thr Thr Val Ser Leu Trp Glu Glu

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                    20                    25                    30
Phe Ser Ser Ser Asp Leu Ala Asp Leu Arg Phe Leu Asp Met Ser Gln
            35                    40                    45
Asn Gln Phe Gln Tyr Leu Pro Asp Gly Phe Leu Arg Lys Met Pro Ser
    50                    55                    60
Leu Ser His Leu Asn Leu His Gln Asn Cys Leu Met Thr Leu His Ile
65                    70                    75                    80
Arg Glu His Glu Pro Pro Gly Ala Leu Thr Glu Leu Asp Leu Ser His
                85                    90                    95
Asn Gln Leu Ser Glu Leu His Leu Ala Pro Gly Leu Ala Ser Cys Leu
            100                   105                   110
Gly Ser Leu Arg Leu Phe Asn Leu Ser Ser Asn Gln Leu Leu Gly Val
            115                   120                   125
Pro Pro Gly Leu Phe Ala Asn Ala Arg Asn Ile Thr Thr Leu Asp Met
            130                   135                   140
Ser His Asn Gln Ile
145
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<210> 4435
<211> 783
<212> DNA
<213> Homo sapiens
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<400> 4435
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120
gtggacctgc tcctgggagg cgacctgcgc taccatctgc agcagaatgt gcatttcaca
180
gaggggactg tgaaactcta catctgtgag ctggcactgg ccctggagta tcttcagagg
240
taccacatca tccacagaga catcaagcca gacaatatcc tgctggatga acacggacat
300
gttcacatta cagacttcaa catagcgacg gtagtgaaag gagcagaaag ggcttcctcc
360
atggctggca ccaagcccta catggctcca gaagtattcc aggtgtacat ggacagaggc
420
cccggatact cgtaccctgt cgactggtgg tccctgggca tcacagccta tgagctgctg
480
cggggctgga ggccgtacga aatccactcg gtcacgccca tcgatgaaat cctcaacatg
540
ttcaaggtgg agcgtgtcca ctactcctcc acgtggtgca aggggatggt ggccctgcta
600
aggaagctcc tgaccaagga tcctgagagc cgcgtgtcca gccttcatga catacagagc
660
gtgccctact ggccgacat gaactgggac gcggtgttca agaaggcact gatgcccggc
720
tttgtgccca ataaagggag gttgaactgc gatcccacat ttgagcttga agagatgatt
780
cta
783
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<210> 4436
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<211> 261
<212> PRT
<213> Homo sapiens

<400> 4436
Xaa Ala Arg Asp Glu Val Arg Asn Val Phe Arg Glu Leu Gln Ile Met
1               5                   10                  15
Gln Gly Leu Glu His Pro Phe Val Val Asn Leu Trp Tyr Ser Phe Gln
            20                  25                  30
Asp Glu Glu Asp Met Phe Met Val Val Asp Leu Leu Leu Gly Gly Asp
        35                  40                  45
Leu Arg Tyr His Leu Gln Gln Asn Val His Phe Thr Glu Gly Thr Val
    50                  55                  60
Lys Leu Tyr Ile Cys Glu Leu Ala Leu Ala Leu Glu Tyr Leu Gln Arg
65                  70                  75                  80
Tyr His Ile Ile His Arg Asp Ile Lys Pro Asp Asn Ile Leu Leu Asp
                85                  90                  95
Glu His Gly His Val His Ile Thr Asp Phe Asn Ile Ala Thr Val Val
        100                 105                 110
Lys Gly Ala Glu Arg Ala Ser Ser Met Ala Gly Thr Lys Pro Tyr Met
        115                 120                 125
Ala Pro Glu Val Phe Gln Val Tyr Met Asp Arg Gly Pro Gly Tyr Ser
        130                 135                 140
Tyr Pro Val Asp Trp Trp Ser Leu Gly Ile Thr Ala Tyr Glu Leu Leu
145                 150                 155                 160
Arg Gly Trp Arg Pro Tyr Glu Ile His Ser Val Thr Pro Ile Asp Glu
                165                 170                 175
Ile Leu Asn Met Phe Lys Val Glu Arg Val His Tyr Ser Ser Thr Trp
                180                 185                 190
Cys Lys Gly Met Val Ala Leu Leu Arg Lys Leu Leu Thr Lys Asp Pro
            195                 200                 205
Glu Ser Arg Val Ser Ser Leu His Asp Ile Gln Ser Val Pro Tyr Leu
    210                 215                 220
Ala Asp Met Asn Trp Asp Ala Val Phe Lys Lys Ala Leu Met Pro Gly
225                 230                 235                 240
Phe Val Pro Asn Lys Gly Arg Leu Asn Cys Asp Pro Thr Phe Glu Leu
                245                 250                 255
Glu Glu Met Ile Leu
            260


<210> 4437
<211> 620
<212> DNA
<213> Homo sapiens

<400> 4437
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gtgaagacca tccgggaggt gcagcctgac gtggtggtcg tggagctctg ccaatatcgt
120
gtgtccatgc tgaagatgga cgagagcacg ctgctgcggg aggcccagga gctcagcctg
180
gagaagctgc agcaggccgt gaggcagaac gggctcatgt cggggctgat gcagatgctg
240
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ctgctgaagg tgtctgcaca catcaccgag cagctgggca tggccccagg tggcgagttc
300
agggaggcct tcaaggaggc cagcaaggtg cctttctgca agttccacct gggtgaccga
360
cccatccccg tcaccttcaa gagggccatc gcagcgctct ccttctggca gaaggtcagg
420
ctggcttggg gcctgtgctt cctgtcagac cccatcagca aggatgacgt ggaacgctgc
480
aagcagaagg acctactgga gcagatgatg gccgagatga ttggcgagtt cccagacctg
540
caccgcacca tcgtctcgga gcgcgacgtc tacctaacct acatgctgcg ccaggccgcg
600
cggcgcctcg agctgcctcg
620

<210> 4438
<211> 206
<212> PRT
<213> Homo sapiens

<400> 4438
Xaa Cys Arg Val Tyr Val Val Gly Thr Ala His Phe Ser Asp Asp Ser
 1   5   10   15
Lys Arg Asp Val Val Lys Thr Ile Arg Glu Val Gln Pro Asp Val Val
            20   25   30
Val Val Glu Leu Cys Gln Tyr Arg Val Ser Met Leu Lys Met Asp Glu
        35   40   45
Ser Thr Leu Leu Arg Glu Ala Gln Glu Leu Ser Leu Glu Lys Leu Gln
    50   55   60
Gln Ala Val Arg Gln Asn Gly Leu Met Ser Gly Leu Met Gln Met Leu
65   70   75   80
Leu Leu Lys Val Ser Ala His Ile Thr Glu Gln Leu Gly Met Ala Pro
                85   90   95
Gly Gly Glu Phe Arg Glu Ala Phe Lys Glu Ala Ser Lys Val Pro Phe
            100   105   110
Cys Lys Phe His Leu Gly Asp Arg Pro Ile Pro Val Thr Phe Lys Arg
        115   120   125
Ala Ile Ala Ala Leu Ser Phe Trp Gln Lys Val Arg Leu Ala Trp Gly
        130   135   140
Leu Cys Phe Leu Ser Asp Pro Ile Ser Lys Asp Asp Val Glu Arg Cys
145   150   155   160
Lys Gln Lys Asp Leu Leu Glu Gln Met Met Ala Glu Met Ile Gly Glu
                165   170   175
Phe Pro Asp Leu His Arg Thr Ile Val Ser Glu Arg Asp Val Tyr Leu
            180   185   190
Thr Tyr Met Leu Arg Gln Ala Ala Arg Arg Leu Glu Leu Pro
            195   200   205

<210> 4439
<211> 2121
<212> DNA
<213> Homo sapiens

<400> 4439

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nttttttttt ttgaacttct atatctatat tttatatttt aagattggga cagagaaact
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120
tctaaaatta acttttattg ttagagacac atctttagaa aagtttgtaa atatcaacat
180
ttaccatctt attttttcct ttgagaccaa gcatcacaga ccaaaagcca caaagtttac
240
aataatttat tattgttgca tgacatttgc cagtaaaata aattatagaa actatagagt
300
ctttataaac tattttgtat atcatattca cttcctaatg cttactgcag taactgtatg
360
aaatttaatt agattacgtt ttagcattag tcagaagatt taaaaaatat gtaaatgtt
420
ttcacagtac tttggattta taaaagaccc cattatttta acttttgtgc aacctgtttg
480
aaatgtataa aaaacctttt acaaaccaaa aggtggcgta aggttttact gagttgctga
540
agacatctta ctttcttgaa tttctactta acatccatgt ggtgcacttt ttcaggcatt
600
gtaataagtg caaataaata atcaattatt gatttctaaa aatctatacc aatagacaat
660
actcaggctt ggaaatattt tgaacactca gatataaaaa ttcagtaaac aatttatgca
720
tggtattttc tctccctgtc ctccctctcc ctcctccctt ccctatcta tttggttaaa
780
aaaaaaaaag ttcaacttcg atttaagtcc tagggcctga caaagtgacc ctggataaat
840
gtcatctcca gccatctgtt ttctttagtt ctcattacat ctgtccaggc tcttctatca
900
gcatcaatcc tttcctgcag ggacggaaga gttttcaaat ccttgctgaa agcattttgt
960
tctcctctgt aacagcacag ggcatgaaat tgtttggagt ctttgtaacc agtctgttca
1020
gtcctggtcc ctttccagtc ccggtccctt tccagcctct ggagtcctga cagaagagaa
1080
gcttgtaagg tagcagcaaa atgctgcatc tgttagaatc tcacaaactc acttggtctt
1140
tgaatgtcca ttcttggata acgtccttat ccatcctctt ctcttcagtg aactttgatg
1200
gaatatttcc gcagtttcag aaactggaaa agcttgtctt ttgtcctctt cttcaaggcc
1260
atcagggcac gcgttttctc ctccacatct tgatctatgg caaaaatgat cttggctctc
1320
tcctctgctt tcttgtctcc agagtttctg aagagccttt ctagtgattc ttggtctgtg
1380
ttttcaaaga tgttgcccac ggctttctta cgagaggctg tgtcgaagtg gtagccatgg
1440
atggatgggc tgactcgtag cgacgtggac atgatgatgg cttggtggct tcgctttgct
1500
ttcatcgatg tggggatctt ccggaattca gctcccaggc tttccatgat tggagctgat
1560
tcatctgaag agaaattttt gcgtagaatt ggaagattcg gttatgggta tggcccttat
1620
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cagccagttc cagaacaacc actataccca caaccatacc aaccacaata ccaacaatat
1680
acctttaat  atcatcagta actgcaggac atgattatgg aggtttgact ggcaaatacg
1740
acttctacat ccatattctc atctttcata ccatatcaca ctactaccac tttttgaaga
1800
attatcataa ggcaatgcag aataaaagaa ataccatgat ttactgtata ctctttgttt
1860
caggatactt cccttcctaa ttatcatttg attagatact tgcaatttaa actgttaagc
1920
tgtgttcact gctgtttctg aataatagaa attcattcct ctccaaaagc aataaatttc
1980
aagcacattt tccaatacct gtggcatcac actactacca cttttgaag  aatcatcaaa
2040
gggcaatgca aatgaaaaac attataattt actgtatact ctttgtttca ggatacttgc
2100
cttttcaatt gtcacttgat g
2121
```

```
<210> 4440
<211> 82
<212> PRT
<213> Homo sapiens
```

```
<400> 4440
Met Asp Gly Leu Thr Arg Ser Asp Val Asp Met Met Met Ala Trp Trp
 1               5                  10                  15
Leu Arg Phe Ala Phe Ile Asp Val Gly Ile Phe Arg Asn Ser Ala Pro
            20                  25                  30
Arg Leu Ser Met Ile Gly Ala Asp Ser Ser Glu Glu Lys Phe Leu Arg
        35                  40                  45
Arg Ile Gly Arg Phe Gly Tyr Gly Tyr Gly Pro Tyr Gln Pro Val Pro
    50                  55                  60
Glu Gln Pro Leu Tyr Pro Gln Pro Tyr Gln Pro Gln Tyr Gln Gln Tyr
65                  70                  75                  80
Thr Phe
```

```
<210> 4441
<211> 2055
<212> DNA
<213> Homo sapiens
```

```
<400> 4441
ntaggaaggg gaggggaagg ggaaggcgag aaggggagag gcagggggaaa gaggggaaga
60
gtcgtgggag ctgggagagg agggaaagag gggaagagtc gtgggagctg gcagaggagg
120
gaaagggggga gccgaacgtg aagggcgaag ggcggggcgg ggcaggagag tcggggtata
180
gagcaggcag gtgttaatgg catgggaagg aagagtaaga agtggggcaa gaaggtgtcg
240
cggtacgagg ggaaggtgag actcaagaag gtgccggcta agaagctggt gccggcgtgg
300
```

```
aaggagaagg tgctgtgggc cctgctggca gtgctcctgg cgtcgtggag gctgtgggcg
360
atcaaggatt tccaggaatg cacctggcag gttgtcctga acgagtttaa gagggtaggc
420
gagagtggtg tgagcgacag cttctttgag caagagcccg tggacacagt gagcagcttg
480
tttcacatgc tggtggactc acccatcgac ccgagcgaga aatacctggg cttcccttac
540
tacctgaaga tcaactactc ctgcgaggaa aagccctctg aggacctggt gcgcatgggc
600
cacctgacgg ggctaaagcc cctggtgctg gtcaccttcc agtccccagt caacttctac
660
cgctggaaga tagagcagct gcagatccag atggaggctg cccccttccg cagcaaaggt
720
gggcctgggg gaggcgggag ggatcgcaac ctggcaggga tgaatatcaa cggcttcctg
780
aagagagacc gggacaataa catccaattc actgtgggag aggagctctt caacctgatg
840
ccccagtact ttgtgggtgt ctcatcgagg cccttgtggc acactgtgga ccagtcacct
900
gtgcttatcc tgggaggcat tcccaatgag aagtacgtcc tgatgactga caccagcttc
960
aaggacttct ctctcgtgga ggtgaacggt gtggggcaga tgctgagcat tgacagttgc
1020
tgggtgggct ccttctactg cccccattct ggcttcacag ccaccatcta tgacactatt
1080
gccaccgaga gcaccctctt cattcggcag aaccagctgg tctactattt tacaggcacc
1140
tataccacac tctatgagag aaaccgcggc agtggtgagt gtgctgtggc tggacccacg
1200
cctggggagg gcaccctggt gaacccctcc actgaaggca gttggattcg tgtcctggcc
1260
agcgagtgca tcaagaagct gtgccctgtg tatttccata gcaatggctc tgagtacata
1320
atggccctca ccacgggcaa gcatgagggt tatgtacact cgggaccat cagagttacc
1380
acctgctcca taatttggtc tgaatacatc gcgggtgagt atactctact gctgctggtg
1440
gagagtggat atggtaatgc aagtaaacgt ttccaggtgg tcagctacaa cacagctagt
1500
gatgacctgg aacttctcta ccacatccca gaattcatcc ctgaagctcg aggattggag
1560
ttcctgatga tcctagggac agagtcctac accagcactg caatggcccc caagggcatc
1620
ttctgtaacc cgtacaacaa tctgatcttc atctggggca acttcctcct gcagagatct
1680
ggtacctcct ggagggcagc taccgggtct accagctgtt cccttccaag ggctggcagg
1740
tgcacatcag cttaaagctg atgcaacagt cctctctcta cgcatccaat gagaccatgc
1800
tgaccctctt ctacgaagac agcaaactgt accaggtgcc cggtggagct atgcggggac
1860
atcggggcac cccaggaggg ctgaccccag ctcacctggc cctgccttcc ccctgcagct
1920
```

3631

ggtgtacctt atgaacaacc agaagggcca gctggtcaag aggctcgtgc ccgtggagca
1980
gcttctgatg tatcaacagc acaccagcca ctatgacttg gagcggaaag ggtgagaaga
2040
caccggacca tgaca
2055

<210> 4442
<211> 517
<212> PRT
<213> Homo sapiens

<400> 4442
Met Gly Arg Lys Ser Lys Lys Trp Gly Lys Lys Val Ser Arg Tyr Glu
1   5   10   15
Gly Lys Val Arg Leu Lys Lys Val Pro Ala Lys Lys Leu Val Pro Ala
                20   25   30
Trp Lys Glu Lys Val Leu Trp Ala Leu Leu Ala Val Leu Leu Ala Ser
                35   40   45
Trp Arg Leu Trp Ala Ile Lys Asp Phe Gln Glu Cys Thr Trp Gln Val
    50   55   60
Val Leu Asn Glu Phe Lys Arg Val Gly Glu Ser Gly Val Ser Asp Ser
65   70   75   80
Phe Phe Glu Gln Glu Pro Val Asp Thr Val Ser Ser Leu Phe His Met
                85   90   95
Leu Val Asp Ser Pro Ile Asp Pro Ser Glu Lys Tyr Leu Gly Phe Pro
                100   105   110
Tyr Tyr Leu Lys Ile Asn Tyr Ser Cys Glu Glu Lys Pro Ser Glu Asp
            115   120   125
Leu Val Arg Met Gly His Leu Thr Gly Leu Lys Pro Leu Val Leu Val
        130   135   140
Thr Phe Gln Ser Pro Val Asn Phe Tyr Arg Trp Lys Ile Glu Gln Leu
145   150   155   160
Gln Ile Gln Met Glu Ala Ala Pro Phe Arg Ser Lys Gly Gly Pro Gly
                165   170   175
Gly Gly Gly Arg Asp Arg Asn Leu Ala Gly Met Asn Ile Asn Gly Phe
                180   185   190
Leu Lys Arg Asp Arg Asp Asn Asn Ile Gln Phe Thr Val Gly Glu Glu
            195   200   205
Leu Phe Asn Leu Met Pro Gln Tyr Phe Val Gly Val Ser Ser Arg Pro
        210   215   220
Leu Trp His Thr Val Asp Gln Ser Pro Val Leu Ile Leu Gly Gly Ile
225   230   235   240
Pro Asn Glu Lys Tyr Val Leu Met Thr Asp Thr Ser Phe Lys Asp Phe
                245   250   255
Ser Leu Val Glu Val Asn Gly Val Gly Gln Met Leu Ser Ile Asp Ser
                260   265   270
Cys Trp Val Gly Ser Phe Tyr Cys Pro His Ser Gly Phe Thr Ala Thr
            275   280   285
Ile Tyr Asp Thr Ile Ala Thr Glu Ser Thr Leu Phe Ile Arg Gln Asn
        290   295   300
Gln Leu Val Tyr Tyr Phe Thr Gly Thr Tyr Thr Thr Leu Tyr Glu Arg
305   310   315   320
Asn Arg Gly Ser Gly Glu Cys Ala Val Ala Gly Pro Thr Pro Gly Glu

```
                    325                      330                      335
Gly Thr Leu Val Asn Pro Ser Thr Glu Gly Ser Trp Ile Arg Val Leu
                340                      345                      350
Ala Ser Glu Cys Ile Lys Lys Leu Cys Pro Val Tyr Phe His Ser Asn
                355                      360                      365
Gly Ser Glu Tyr Ile Met Ala Leu Thr Thr Gly Lys His Glu Gly Tyr
            370                      375                      380
Val His Phe Gly Thr Ile Arg Val Thr Thr Cys Ser Ile Ile Trp Ser
385                      390                      395                      400
Glu Tyr Ile Ala Gly Glu Tyr Thr Leu Leu Leu Leu Val Glu Ser Gly
                    405                      410                      415
Tyr Gly Asn Ala Ser Lys Arg Phe Gln Val Val Ser Tyr Asn Thr Ala
                420                      425                      430
Ser Asp Asp Leu Glu Leu Leu Tyr His Ile Pro Glu Phe Ile Pro Glu
                435                      440                      445
Ala Arg Gly Leu Glu Phe Leu Met Ile Leu Gly Thr Glu Ser Tyr Thr
            450                      455                      460
Ser Thr Ala Met Ala Pro Lys Gly Ile Phe Cys Asn Pro Tyr Asn Asn
465                      470                      475                      480
Leu Ile Phe Ile Trp Gly Asn Phe Leu Leu Gln Arg Ser Gly Thr Ser
                    485                      490                      495
Trp Arg Ala Ala Thr Gly Ser Thr Ser Cys Ser Leu Pro Arg Ala Gly
                500                      505                      510
Arg Cys Thr Ser Ala
            515
```

```
<210> 4443
<211> 692
<212> DNA
<213> Homo sapiens

<400> 4443
agatctggag ggagggtaag ggctggtttc atgctgactt catttctggt tggatggcct
60
ccagggtaag gtctgggccc ctgctgctga catcccccac atgtcagtct gcctgctagt
120
gggattgact aactcatcaa cgtggagttt aatgcccaac caagtgcaga ccacgctcct
180
gttttgcgtc accctctgcg aagcttcctg caaacttgac tccctgccca gtgcccccag
240
ccccaaggct ggtctccagg aggtaaggcc cgccctgcag caacaccgg tgcttgggct
300
cctgctgagc agttctttcc tgcgagtaac agaaccaggg agggaggtgg gctgtggcct
360
cccctgcccc tacagtcatc tcctgcagct cccaccatgc tggactcatc agcagcagag
420
caagtgaccc gactgacgct gaagctcttg ggacagaagc tggagcaaga acggcagaac
480
gtggaagggg gacctgaggg ctccacctcg agccaggaaa tgaggaccgg ccggacgatg
540
ccctgcagac tgctctgaag agaaggaggg accttctgca gagactccgg gaacaacacc
600
tcctggacga gctctctcgg gcccaggcct ggagcgggcc aagcagagga gccctcgagt
660
```

3633

```
cagccctgcc cccagagctg cccccccacgc gt
692


<210> 4444
<211> 108
<212> PRT
<213> Homo sapiens


<400> 4444
Met Ser Val Cys Leu Leu Val Gly Leu Thr Asn Ser Ser Thr Trp Ser
1               5                   10                  15
Leu Met Pro Asn Gln Val Gln Thr Thr Leu Leu Phe Cys Val Thr Leu
            20                  25                  30
Cys Glu Ala Ser Cys Lys Leu Asp Ser Leu Pro Ser Ala Pro Ser Pro
        35                  40                  45
Lys Ala Gly Leu Gln Glu Val Arg Pro Ala Leu Gln Ala Thr Pro Val
    50                  55                  60
Leu Gly Leu Leu Leu Ser Ser Ser Phe Leu Arg Val Thr Glu Pro Gly
65                  70                  75                  80
Arg Glu Val Gly Cys Gly Leu Pro Cys Pro Tyr Ser His Leu Leu Gln
                85                  90                  95
Leu Pro Pro Cys Trp Thr His Gln Gln Gln Ser Lys
            100                 105
```

```
<210> 4445
<211> 901
<212> DNA
<213> Homo sapiens


<400> 4445
ggatccactg cctctgtgcc tgcctgtact gccgatgctc cagtggataa ctcagcatcc
60
cagccaaggc ccaatgccac tgaagatgga cctgcccct ggggacccag gagtcctacc
120
actcagctgt ccccaggagt gcccagaccc tcattcttat ccaggaccta ggagccctac
180
ccctggcctt ccctcatcag ccgtaaatga tgatttactg ctgttaccat catcactgcc
240
ttcagtgacc aagggccttc caaggtgcca gctctggaac gaaggatgcc cttgggaggt
300
gatgatactc aggtacacgg gtgctcaaca gattgcttcc tcctatcctc agacggtctt
360
tgcatgcatg cagccattgg cactcccatt gtgtggaagg aaaccagccc agggtcacac
420
agctggtcag cagcaacata gctggtctca aatctaaggt gcctgaccat gcctccatga
480
gggaccgcct ccaagggagg ttgatcctgg ctttggggag cctttcctgg ctgcacgaa
540
taacctccat tgttcgagac cccaaactct gctcacatct tcctttccct gtctctgctt
600
gggctatgat cacggtgact ctagcaaccc ttcatggaca ttataatact ctctgccatt
660
cactttggt ctaatctgac ttcaacccc acttacttgg tctctccttt tacaaccaac
720
```

3634

```
atggcaaaac cccatctcca caaaaattgg ataatttgat aattatcatt attgggtttc
780
tgagacgtta cacatttaac attctcttct gcacaagttg cctttgtgtg agtatactaa
840
ctttctgtag aggtatactt gtaatcacaa ataagaataa attatataaa acaaaaaaaa
900
a
901
```

```
<210> 4446
<211> 140
<212> PRT
<213> Homo sapiens
```

```
<400> 4446
Met Leu Gln Trp Ile Thr Gln His Pro Ser Gln Gly Pro Met Pro Leu
 1               5                  10                  15
Lys Met Asp Leu Pro Pro Gly Asp Pro Gly Val Leu Pro Leu Ser Cys
            20                  25                  30
Pro Gln Glu Cys Pro Asp Pro His Ser Tyr Pro Gly Pro Arg Ser Pro
        35                  40                  45
Thr Pro Gly Leu Pro Ser Ser Ala Val Asn Asp Asp Leu Leu Leu Leu
    50                  55                  60
Pro Ser Ser Leu Pro Ser Val Thr Lys Gly Leu Pro Arg Cys Gln Leu
65                  70                  75                  80
Trp Asn Glu Gly Cys Pro Trp Glu Val Met Ile Leu Arg Tyr Thr Gly
                85                  90                  95
Ala Gln Gln Ile Ala Ser Ser Tyr Pro Gln Thr Val Phe Ala Cys Met
                100                 105                 110
Gln Pro Leu Ala Leu Pro Leu Cys Gly Arg Lys Pro Ala Gln Gly His
        115                 120                 125
Thr Ala Gly Gln Gln Gln His Ser Trp Ser Gln Ile
    130                 135                 140
```

```
<210> 4447
<211> 951
<212> DNA
<213> Homo sapiens
```

```
<400> 4447
agatgtccaa agagcagcgg ctgcccaggc cttgtgcagc gggcagcgag cagcccaggg
60
agccaggccc cagacaccgc actcagggcc atggccgaca ggggcccgtg gagggtgggg
120
gtggtgggct atggccgcct cggacagtcc cttgtgtccc gccttctggc tcagggatca
180
gaactgggcc tagaacttgt ttttgtgtgg aaccgtgacc ctggacgaat ggcagggagt
240
gtgccccctg ccctgcagct cgaagacctc actacacttg aggaaaggca ccctgacctt
300
gtggtagaag tggcccatcc aaaaataatc catgaatctg gggtacaaat cctccgtcat
360
gcaaaccttc tgagccttcg tgtcaccatg ccacacaccc cgatggcttc cggcttgag
420
```

```
ggacccctgg ctgcagccca cagccctggg ccttgcactg tgctctacga aggccctgtc
480
cgtgggctct gccctttgc cccgcgaaat tccaacacca tggcggcggc tgccctggct
540
gcccccagcc tgggcttcga tggggtgatt ggggtgctcg tggctgatac cagcctcacg
600
gacatgcacg tggtggatgt agagctgagc ggaccccggg gccccacggg ccgaagcttt
660
gctgtgcaca cccgcagaga gaaccctgcc gagccaggcg cggtcaccgg ctccgccacc
720
gtcacggcct tctggcggag cctcctggcc tgctgccagc tcccctccag gccggggatc
780
catctctgct gagaagcctc ctccctcccg agacaagatc atctgcctgg cctctcacca
840
ccaccatccc acccctgccc tgccccactt ccccagggtc tcccttctga ctcagtaaag
900
atcaccgctg cctccccccg caaaaaaaaa aaaaaaaaaa aaaaaaaaa a
951
```

```
<210> 4448
<211> 263
<212> PRT
<213> Homo sapiens
```

```
<400> 4448
Arg Cys Pro Lys Ser Ser Gly Cys Pro Gly Leu Val Gln Arg Ala Ala
 1               5                   10                  15
Ser Ser Pro Gly Ser Gln Ala Pro Asp Thr Ala Leu Arg Ala Met Ala
            20                  25                  30
Asp Arg Gly Pro Trp Arg Val Gly Val Val Gly Tyr Gly Arg Leu Gly
        35                  40                  45
Gln Ser Leu Val Ser Arg Leu Leu Ala Gln Gly Ser Glu Leu Gly Leu
    50                  55                  60
Glu Leu Val Phe Val Trp Asn Arg Asp Pro Gly Arg Met Ala Gly Ser
65                  70                  75                  80
Val Pro Pro Ala Leu Gln Leu Glu Asp Leu Thr Thr Leu Glu Glu Arg
                85                  90                  95
His Pro Asp Leu Val Val Glu Val Ala His Pro Lys Ile Ile His Glu
                100                 105                 110
Ser Gly Val Gln Ile Leu Arg His Ala Asn Leu Leu Ser Leu Arg Val
            115                 120                 125
Thr Met Ala Thr His Pro Asp Gly Phe Arg Leu Glu Gly Pro Leu Ala
        130                 135                 140
Ala Ala His Ser Pro Gly Pro Cys Thr Val Leu Tyr Glu Gly Pro Val
145                 150                 155                 160
Arg Gly Leu Cys Pro Phe Ala Pro Arg Asn Ser Asn Thr Met Ala Ala
                165                 170                 175
Ala Ala Leu Ala Ala Pro Ser Leu Gly Phe Asp Gly Val Ile Gly Val
                180                 185                 190
Leu Val Ala Asp Thr Ser Leu Thr Asp Met His Val Val Asp Val Glu
            195                 200                 205
Leu Ser Gly Pro Arg Gly Pro Thr Gly Arg Ser Phe Ala Val His Thr
    210                 215                 220
Arg Arg Glu Asn Pro Ala Glu Pro Gly Ala Val Thr Gly Ser Ala Thr
```

```
       225                    230                  235                  240
       Val Thr Ala Phe Trp Arg Ser Leu Leu Ala Cys Cys Gln Leu Pro Ser
                           245                  250                  255
       Arg Pro Gly Ile His Leu Cys
                           260


<210> 4449
<211> 1365
<212> DNA
<213> Homo sapiens

<400> 4449
ncaattgatg atatttatca ttgtgcccag tttctacaaa taaaagatgg gtggattatt
60
ttctcgatgg aggacaaaac ctccaactgt agaagttcta gaaagtatag ataaggaaat
120
tcaagcattg gaagaattta gggaaaaaaa tcagagatta caaaaattat gggttggaag
180
attaattctg tattcctcag ttctctatct gtttacatgc ttaattgtat atttgtggta
240
tcttcctgat gaatttacag caagacttgc catgacactc ccattttttg cttttccatt
300
gatcatctgg agcataagaa cagtaattat tttcttcttt tccaagagaa cagaaagaaa
360
taatgaagca ttggatgatt taaaatccca gaggaaaaaa atacttgaag aagtcatgga
420
aaaagaaact tacaagacgg ctaaattaat tcttgaaagg tttgatccgt actcaaagaa
480
agcaaaggag tgtgagccgc catctgctgg agcagctgta actgcaagac ctggacaaga
540
gattcgtcag cgaactgcag ctcaaagaaa cctttctcaa caccagcaag ccctaaccag
600
ggccctcctc cacaagttcc agtatctcct ggaccaccaa aggacagttc tgcccctggt
660
ggacccccag aaaggactgt tactccagcc ctatcatcaa atgtgttacc aagacatctt
720
ggatcccctg ctacttcagt gcctggaatg ggtcttcatc ctccaggtcc acctttagca
780
agacctattc tcccccgaga acgaggtgct ttggatagaa ttgttgaata tttggttggt
840
gatggtccac aaaacaggta tgcacttata tgtcagcagt gtttttctca taatggcatg
900
gctttgaagg aagaatttga atacattgct tttcgatgtg cctactgttt tttcttgaac
960
cctgcaagaa aaaccagacc tcaggctcca agacttcctg agtttagttt tgagaagagg
1020
caggtggtgg aaggttcaag ttcagttggt cccttgccat caggaagtgt gctttcatca
1080
gacaaccagt ttaatgaaga atctttagaa cacgatgttc ttgatgataa tacagagcag
1140
acagatgaca aaataccagc tacagaacag acaaaccaag tgattgaaaa agcatctgac
1200
tcagaggaac cagaggagaa acaagagact gagaatgagg aagcctcagt gattgaaacc
1260
```

3637

aactccacag ttcctggagc tgattctatt cctgatcctg aactaagtgg agaatctttg
1320
acggcagagt agtaaatgct tccacgtgcc ttcaactgga aaaaa
1365

<210> 4450
<211> 194
<212> PRT
<213> Homo sapiens

<400> 4450
Met Gly Leu His Pro Pro Gly Pro Pro Leu Ala Arg Pro Ile Leu Pro
1   5   10   15
Arg Glu Arg Gly Ala Leu Asp Arg Ile Val Glu Tyr Leu Val Gly Asp
            20   25   30
Gly Pro Gln Asn Arg Tyr Ala Leu Ile Cys Gln Gln Cys Phe Ser His
        35   40   45
Asn Gly Met Ala Leu Lys Glu Glu Phe Glu Tyr Ile Ala Phe Arg Cys
    50   55   60
Ala Tyr Cys Phe Phe Leu Asn Pro Ala Arg Lys Thr Arg Pro Gln Ala
65   70   75   80
Pro Arg Leu Pro Glu Phe Ser Phe Glu Lys Arg Gln Val Val Glu Gly
                85   90   95
Ser Ser Ser Val Gly Pro Leu Pro Ser Gly Ser Val Leu Ser Ser Asp
            100   105   110
Asn Gln Phe Asn Glu Glu Ser Leu Glu His Asp Val Leu Asp Asp Asn
        115   120   125
Thr Glu Gln Thr Asp Asp Lys Ile Pro Ala Thr Glu Gln Thr Asn Gln
    130   135   140
Val Ile Glu Lys Ala Ser Asp Ser Glu Glu Pro Glu Glu Lys Gln Glu
145   150   155   160
Thr Glu Asn Glu Glu Ala Ser Val Ile Glu Thr Asn Ser Thr Val Pro
                165   170   175
Gly Ala Asp Ser Ile Pro Asp Pro Glu Leu Ser Gly Glu Ser Leu Thr
            180   185   190
Ala Glu

<210> 4451
<211> 1637
<212> DNA
<213> Homo sapiens

<400> 4451
nntcctggag gacccaggac tgaccaagtc cccggcctca gcaggcgatc atgttggcag
60
gcttggatct tctcgctctg tgaccagcct gggccacaca ctggtggaat ctgctctcac
120
gaggccttcc ctgcccagtc cccacaggac ctcacctagg gtggaggaga gcaacagcaa
180
gctcctggag tcagagagga agctgcagga ggagcgacac cgcaccgtgg tcttggagca
240
acatctggag aagatacgcc tggagccagg gaaggcatca gcctcccaga gagcagctcc
300

3638

caggaccaaa acagctccgc tcctggatgt atgctgtgta cggggccttg gctgtgatgg
360
gcacaatggg cccttggtac ctgctgctgc tgcttggtca ctgtgtgggc ctctatgtgg
420
cctcgctttt gggccagccc tggctctgtc ttggccttgg cttggccagc ctggcctcct
480
tcaagatgga cccctaatc tcttggcaga gcgggtttgt aacaggcact tttgatcttc
540
aagaggtgct gtttcatggg ggcagcagct tcacagtgct gcgttgcacc agctttgcac
600
tggagagctg tgcccaccct gaccgccact nactccttag ctgacctgct caagtacaac
660
ttctacctgc ccttcttctt cttcgggccc atcatgacct ttgatcgctt ccatgctcag
720
gtgagccagg tggagccagt gagacgcgag ggtgagctgt ggcacatccg agcccaggca
780
ggcctaagcg tggtggccat catggccgtc gacatcttct ttcacttctt ctacatcctc
840
actatcccca gcgacctcaa gttcgccaac cgcctcccag acagtgccct cgctggccta
900
gcctattcaa acctggtgta tgactgggtg aaggcggccg tcctctttgg tgttgtcaac
960
actgtggcat gcctcgacca cctggaccca ccccagcctc ccaagtgcat caccgcactc
1020
tacgtctttg cggaaacgca ctttgaccgt ggcatcaacg actggctttg caaatatgtg
1080
tataaccaca ttggtgggga gcattccgct gtgatcccag agctggcagc cacagtggcc
1140
acatttgcca tcaccacact gtggcttggg ccttgtgaca ttgtctacct gtggtcattc
1200
cttaactgct ttggcctcaa ctttgagctc tggatgcaaa aactggcaga gtggggcccc
1260
ctagcacgaa ttgaggcctc tctgtcagtg cagatgtccc gtagggtccg ggccctgttt
1320
ggagccatga acttctgggc catcatcatg tacaaccttg tgagcctgaa cagcctcaaa
1380
ttcacagagc tggttgcccg gcgcctgcta ctcacagggt cccccagac cacgctgtcc
1440
atcctgtttg tcacctactg tggcgtccag ctggtaaagg agcgtgagcg aaccttggca
1500
ctggaggagg agcagaagca ggacaaagag aagccggagt aggagggagc gggtagaggg
1560
atgggctctg ctcagctatt cttgggccag atggggcctg accgatagaa taaaagactt
1620
ttctacaaca aaaaaaa
1637

<210> 4452
<211> 328
<212> PRT
<213> Homo sapiens

<400> 4452
Met Gly Ala Ala Ala Ser Gln Cys Cys Val Ala Pro Ala Leu His Trp

```
 1                5                        10                        15
Arg Ala Val Pro Thr Leu Thr Ala Thr Xaa Ser Leu Ala Asp Leu Leu
            20                        25                        30
Lys Tyr Asn Phe Tyr Leu Pro Phe Phe Phe Phe Gly Pro Ile Met Thr
            35                        40                        45
Phe Asp Arg Phe His Ala Gln Val Ser Gln Val Glu Pro Val Arg Arg
50                        55                        60
Glu Gly Glu Leu Trp His Ile Arg Ala Gln Ala Gly Leu Ser Val Val
65                  70                        75                        80
Ala Ile Met Ala Val Asp Ile Phe Phe His Phe Phe Tyr Ile Leu Thr
                  85                        90                        95
Ile Pro Ser Asp Leu Lys Phe Ala Asn Arg Leu Pro Asp Ser Ala Leu
                  100                       105                       110
Ala Gly Leu Ala Tyr Ser Asn Leu Val Tyr Asp Trp Val Lys Ala Ala
            115                       120                       125
Val Leu Phe Gly Val Val Asn Thr Val Ala Cys Leu Asp His Leu Asp
            130                       135                       140
Pro Pro Gln Pro Pro Lys Cys Ile Thr Ala Leu Tyr Val Phe Ala Glu
145                       150                       155                       160
Thr His Phe Asp Arg Gly Ile Asn Asp Trp Leu Cys Lys Tyr Val Tyr
                  165                       170                       175
Asn His Ile Gly Gly Glu His Ser Ala Val Ile Pro Glu Leu Ala Ala
            180                       185                       190
Thr Val Ala Thr Phe Ala Ile Thr Thr Leu Trp Leu Gly Pro Cys Asp
            195                       200                       205
Ile Val Tyr Leu Trp Ser Phe Leu Asn Cys Phe Gly Leu Asn Phe Glu
            210                       215                       220
Leu Trp Met Gln Lys Leu Ala Glu Trp Gly Pro Leu Ala Arg Ile Glu
225                       230                       235                       240
Ala Ser Leu Ser Val Gln Met Ser Arg Arg Val Arg Ala Leu Phe Gly
                  245                       250                       255
Ala Met Asn Phe Trp Ala Ile Ile Met Tyr Asn Leu Val Ser Leu Asn
                  260                       265                       270
Ser Leu Lys Phe Thr Glu Leu Val Ala Arg Arg Leu Leu Leu Thr Gly
            275                       280                       285
Phe Pro Gln Thr Thr Leu Ser Ile Leu Phe Val Thr Tyr Cys Gly Val
            290                       295                       300
Gln Leu Val Lys Glu Arg Glu Arg Thr Leu Ala Leu Glu Glu Glu Gln
305                       310                       315                       320
Lys Gln Asp Lys Glu Lys Pro Glu
            325
```

```
<210> 4453
<211> 685
<212> DNA
<213> Homo sapiens

<400> 4453
ttttttttttt ttttttttttt ttttttttttt tttttccagt gtggaaactt actttattcc
60
agccatgatt atcctagttg tcaccttgca cacctgccat ccggtgccat ctcctggctg
120
gcacatctat acccactctg gctctgaaag gcttgtcaac caaaaatggg cagctggggc
180
```

```
taaggcatat ttaaacaaag gctccaaagg accccttttca cttgggtcta gcatccagcc
240
tctctctcag caaaggcagg attgtggtcc cttgtgtttt ctgaacaggg cccagggcag
300
ccaaggcatg ccatcactgc agcactcaac cctctggtca cagtggagtc gccggtccag
360
cctgaaatat tactacagag gagaaagacc cattcttgct atgttgctct atcttccacg
420
tccaaaaaca gtcctatgta gcttcagctg ctccgaaatc aggtcacaga acagcaggag
480
acattccttt ggcaaaaaag gacacgcttt tgtcctgtat cttatactgg taagtgaagc
540
tctgatcccg gtggactgcg ggctgcgatg gtctcctcca caggatcctc agctacagag
600
acagagaaga atgaaagagg agcagccacc ccaggacctg ctccactggg aaccccaccc
660
taccttctct gtgcccttca cgcgt
685
```

```
<210> 4454
<211> 207
<212> PRT
<213> Homo sapiens

<400> 4454
Met Ile Ile Leu Val Val Thr Leu His Thr Cys His Pro Val Pro Ser
1               5                   10                  15
Pro Gly Trp His Ile Tyr Thr His Ser Gly Ser Glu Arg Leu Val Asn
            20                  25                  30
Gln Lys Trp Ala Ala Gly Ala Lys Ala Tyr Leu Asn Lys Gly Ser Lys
        35                  40                  45
Gly Pro Leu Ser Leu Gly Ser Ser Ile Gln Pro Leu Ser Gln Gln Arg
    50                  55                  60
Gln Asp Cys Gly Pro Leu Cys Phe Leu Asn Arg Ala Gln Gly Ser Gln
65                  70                  75                  80
Gly Met Pro Ser Leu Gln His Ser Thr Leu Trp Ser Gln Trp Ser Arg
                85                  90                  95
Arg Ser Ser Leu Lys Tyr Tyr Tyr Arg Gly Glu Arg Pro Ile Leu Ala
            100                 105                 110
Met Leu Leu Tyr Leu Pro Arg Pro Lys Thr Val Leu Cys Ser Phe Ser
            115                 120                 125
Cys Ser Glu Ile Arg Ser Gln Asn Ser Arg Arg His Ser Phe Gly Lys
    130                 135                 140
Lys Gly His Ala Phe Val Leu Tyr Leu Ile Leu Val Ser Glu Ala Leu
145                 150                 155                 160
Ile Pro Val Asp Cys Gly Leu Arg Trp Ser Pro Pro Gln Asp Pro Gln
                165                 170                 175
Leu Gln Arg Gln Arg Arg Met Lys Glu Glu Gln Pro Pro Gln Asp Leu
            180                 185                 190
Leu His Trp Glu Pro His Pro Thr Phe Ser Val Pro Phe Thr Arg
            195                 200                 205
```

```
<210> 4455
<211> 882
```

```
<212> DNA
<213> Homo sapiens

<400> 4455
nacgcgtgcc tcagtaccaa cgggctcggc agcagcccgg gcagtgccgg gcacatgaac
60
ggattaagcc acagcccggg gaacccgtcg accattccca tgaaggacca cgatgccatc
120
aagctgttca ttgggcagat cccccgcaac ctggatgaga aggacctcaa gcccctcttc
180
gaggagtttg gcaaaatcta cgagcttacg gttctgaagg acaggttcac aggcatgcac
240
aaaggctgcg ccttcctcac ctactgcgag cgtgagtcag cgctgaaggc ccagagcgcg
300
ctgcacgagc agaagactct gcccgggatg aaccggccga tccaggtgaa gcctgcggac
360
agcgagagcc gaggagatag tagctgcctg cgccagcccc cttcacatag aaaactcttc
420
gtgggcatgc tcaacaagca acagtccgag gacgacgtgc gccgcctttt cgaggccttt
480
gggaacatcg aggagtgcac catcctgcgc gggcccgacg gcaacagcaa ggggtgcgcc
540
tttgtgaagt actcctccca cgccgaggcg caggccgcca tcaacgcgct acacggcagc
600
cagaccatgc cgggagcctc gtccagtctg gtggtcaagt tcgccgacac cgacaaggag
660
cgcacgatgc ggcgaatgca gcagatggct ggccagatgg gcatgttcaa ccccatggcc
720
atcccttttcg gggcctacgg cgcctacgct caggcactga tgcagcagca agcggccctg
780
atggcatcag tcgcgcaggg cggctacctg aaccccatgg ctgccttcgc tgccgcccag
840
atgcagcaga tggcggccct caacatgaat ggcctggcgg cc
882
```

```
<210> 4456
<211> 261
<212> PRT
<213> Homo sapiens

<400> 4456
Met Lys Asp His Asp Ala Ile Lys Leu Phe Ile Gly Gln Ile Pro Arg
 1               5                  10                  15
Asn Leu Asp Glu Lys Asp Leu Lys Pro Leu Phe Glu Glu Phe Gly Lys
            20                  25                  30
Ile Tyr Glu Leu Thr Val Leu Lys Asp Arg Phe Thr Gly Met His Lys
        35                  40                  45
Gly Cys Ala Phe Leu Thr Tyr Cys Glu Arg Glu Ser Ala Leu Lys Ala
    50                  55                  60
Gln Ser Ala Leu His Glu Gln Lys Thr Leu Pro Gly Met Asn Arg Pro
65                  70                  75                  80
Ile Gln Val Lys Pro Ala Asp Ser Glu Ser Arg Gly Asp Ser Ser Cys
                85                  90                  95
Leu Arg Gln Pro Pro Ser His Arg Lys Leu Phe Val Gly Met Leu Asn
```

```
                    100                   105                    110
Lys Gln Gln Ser Glu Asp Asp Val Arg Arg Leu Phe Glu Ala Phe Gly
        115                   120                    125
Asn Ile Glu Glu Cys Thr Ile Leu Arg Gly Pro Asp Gly Asn Ser Lys
    130                   135                    140
Gly Cys Ala Phe Val Lys Tyr Ser Ser His Ala Glu Ala Gln Ala Ala
145                   150                    155                    160
Ile Asn Ala Leu His Gly Ser Gln Thr Met Pro Gly Ala Ser Ser Ser
                165                   170                    175
Leu Val Val Lys Phe Ala Asp Thr Asp Lys Glu Arg Thr Met Arg Arg
            180                   185                    190
Met Gln Gln Met Ala Gly Gln Met Gly Met Phe Asn Pro Met Ala Ile
        195                   200                    205
Pro Phe Gly Ala Tyr Gly Ala Tyr Ala Gln Ala Leu Met Gln Gln Gln
        210                   215                    220
Ala Ala Leu Met Ala Ser Val Ala Gln Gly Gly Tyr Leu Asn Pro Met
225                   230                    235                    240
Ala Ala Phe Ala Ala Ala Gln Met Gln Gln Met Ala Ala Leu Asn Met
                245                   250                    255
Asn Gly Leu Ala Ala
            260
```

<210> 4457
<211> 1491
<212> DNA
<213> Homo sapiens

<400> 4457
```
nggctggcag gtgcacatca gcttaaagct gatgcaacag tcctctctct acgcatccaa
60
tgagaccatg ctgaccctct tctacgaaga cagcaaactg taccaggtgc ccggtggagc
120
tatgcgggga catcggggca ccccaggagg gctgacccca gctcacctgg ccctgccttc
180
cccctgcagc tggtgtacct tatgaacaac cagaagggcc agctggtcaa gaggctcgtg
240
cccgtggagc agcttctgat gtatcaacag cacaccagcc actatgactt ggagcggaaa
300
gggggctact tgatgctctc cttcatcgac ttctgcccct ctcggtgat gcgcctgcgg
360
agcctgccca gtccgcagag atacacgcgc caggagcgct accgggcgcg ccgccgcgc
420
gtcctggagc gctcgggctt ccacaacgag aactcgctcg ccatctacca gggcctggtc
480
tactacctgc tgtggctgca ctccgtgtac gacaaggatt actacttctt cttggcgagc
540
aattggcgaa gcgcgggcgg cgtgtccata gaaatggaca gctacgaaaa gatctacaac
600
ctcgagtccg cgtacgagct gccggagcgc attttcctgg acaagggcac tgagtacagc
660
ttcgccatct tcctgtcggc gcagggccac tcgttccgga cgcagtcaga actcggtctg
720
cgcgggacca gagtggagcc cgaagggcgg ggcgagggct accagaatct gggagcctgg
780
```

```
ggggcgggga caccatcgga ggggcggggc ctgtctgtgg acgtgggcgt ggtgctggcc
840
gaccccggct gcatcgaggc ctcggtgaag caggaggtcc tgattaatcg caactcggtg
900
ctattttcga ttacgctcaa ggataaaaag ctttgctatg accaaggcat tagtggacat
960
caccttatgg agacttccat gacggtcaat gtgaggtcca agcctggagg ggagggcaag
1020
cgcctggcct tcgacatcac ctacacgctg gaatacagcc gcctgaagaa caaacactac
1080
tttgactgcg ttaacgtgaa cccggagatg ccctgctttc tcttccggga cagtgtctat
1140
gttctgctgg tggtgggtgg cgggcccaca ctggacagcc tcaaggacta cagtgaggac
1200
gaaatctacc gcttcaacag cccccctggac aagaccaaca gccttatctg gaccacgagg
1260
accacaagga ccaccaaaga ctcagccttt cacatcatgt cccacgagag cccaggcatc
1320
gagtggctct gtctggagaa tgccccatgc tatgacaatg ttccccaagg catctttgcc
1380
cctgaattct tcttcaaggt gttggtgagc aataggtgag ccaggcaagt ggcccaggtg
1440
cgggtcaggg gctgcccatg gaatgcctgg cttctcctct aatcctggat c
1491
```

<210> 4458
<211> 405
<212> PRT
<213> Homo sapiens

<400> 4458

```
Met Asn Asn Gln Lys Gly Gln Leu Val Lys Arg Leu Val Pro Val Glu
1               5                   10                  15
Gln Leu Leu Met Tyr Gln Gln His Thr Ser His Tyr Asp Leu Glu Arg
            20                  25                  30
Lys Gly Gly Tyr Leu Met Leu Ser Phe Ile Asp Phe Cys Pro Phe Ser
        35                  40                  45
Val Met Arg Leu Arg Ser Leu Pro Ser Pro Gln Arg Tyr Thr Arg Gln
    50                  55                  60
Glu Arg Tyr Arg Ala Arg Pro Pro Arg Val Leu Glu Arg Ser Gly Phe
65                  70                  75                  80
His Asn Glu Asn Ser Leu Ala Ile Tyr Gln Gly Leu Val Tyr Tyr Leu
                85                  90                  95
Leu Trp Leu His Ser Val Tyr Asp Lys Asp Tyr Tyr Phe Phe Leu Ala
            100                 105                 110
Ser Asn Trp Arg Ser Ala Gly Gly Val Ser Ile Glu Met Asp Ser Tyr
        115                 120                 125
Glu Lys Ile Tyr Asn Leu Glu Ser Ala Tyr Glu Leu Pro Glu Arg Ile
    130                 135                 140
Phe Leu Asp Lys Gly Thr Glu Tyr Ser Phe Ala Ile Phe Leu Ser Ala
145                 150                 155                 160
Gln Gly His Ser Phe Arg Thr Gln Ser Glu Leu Gly Leu Arg Gly Thr
                165                 170                 175
    Arg Val Glu Pro Glu Gly Arg Gly Glu Gly Tyr Gln Asn Leu Gly Ala
```

3644

```
                      180                    185                    190
Trp Gly Ala Gly Thr Pro Ser Glu Gly Arg Gly Leu Ser Val Asp Val
              195                    200                    205
Gly Val Val Leu Ala Asp Pro Gly Cys Ile Glu Ala Ser Val Lys Gln
        210                    215                    220
Glu Val Leu Ile Asn Arg Asn Ser Val Leu Phe Ser Ile Thr Leu Lys
225                    230                    235                    240
Asp Lys Lys Leu Cys Tyr Asp Gln Gly Ile Ser Gly His His Leu Met
                  245                    250                    255
Glu Thr Ser Met Thr Val Asn Val Arg Ser Lys Pro Gly Gly Glu Gly
              260                    265                    270
Lys Arg Leu Ala Phe Asp Ile Thr Tyr Thr Leu Glu Tyr Ser Arg Leu
          275                    280                    285
Lys Asn Lys His Tyr Phe Asp Cys Val Asn Val Asn Pro Glu Met Pro
      290                    295                    300
Cys Phe Leu Phe Arg Asp Ser Val Tyr Val Leu Leu Val Val Gly Gly
305                    310                    315                    320
Gly Pro Thr Leu Asp Ser Leu Lys Asp Tyr Ser Glu Asp Glu Ile Tyr
                  325                    330                    335
Arg Phe Asn Ser Pro Leu Asp Lys Thr Asn Ser Leu Ile Trp Thr Thr
              340                    345                    350
Arg Thr Thr Arg Thr Thr Lys Asp Ser Ala Phe His Ile Met Ser His
          355                    360                    365
Glu Ser Pro Gly Ile Glu Trp Leu Cys Leu Glu Asn Ala Pro Cys Tyr
      370                    375                    380
Asp Asn Val Pro Gln Gly Ile Phe Ala Pro Glu Phe Phe Phe Lys Val
385                    390                    395                    400
Leu Val Ser Asn Arg
              405
```

```
<210> 4459
<211> 1114
<212> DNA
<213> Homo sapiens

<400> 4459
cggggccacg ctgttccaca ggcacgctga gcggcttgaa gacccttccc agctccagag
60
aaggcaacac cgagggaggc ccagcaccac agtccatggc agacacatgg ttcagacttg
120
gccgattgat ctaagaaact ttattgctca gaaccttccc tccctgggca atggaaagag
180
ctttggagac cagcccatgg ggacagagtc agaggcactg ggtgtaaaaa aagagcgagc
240
gtgtggcaca tttggtccat tgtcatgtgt gggtatggca ggaggagggg gtaatctaga
300
agccccacat ctagggcctt ctagggaccc agatatgccc ccttaggcaa ggctcacatg
360
ccaaagcaaa gcagatgagg tcagcctggc ttgggttgag ggctcagtgc ctcttagcct
420
tgccctgggg ttcttggacc ttccggaaac tgagccacat caggctcacg ttgatagcat
480
aggtggtgat acaaacaatg cagaaatcat agagcacgaa gaacaggatc caggccaggt
540
```

agacagaacc agcgagagac accagggagc tcagcagcat caggacagag gcccagcgtg
600
tccgcaggca acctaacaat agctgtagtg tgtagaagat gcaaccgaat atgctgttgg
660
attgattgag gatgctgtcc tgtcccagca catgctccac cagcccgaaa cccctgcccc
720
acctggagga gaagacgcgc gaacagctga tggcggtgcc cacgtcgcag agcgcgcggt
780
aatcccggtc ccgggcgcgc gccgccttca cgtgcagcgc gtagagcgag agcactaagc
840
ccgtcaggca aagagcgagc cgcacccagc cagggctccc ccaggtgctg cccattatct
900
ccaggttccg cccgaggcgc cgcggagaa aaccagccac ggagcagggg ccgggcggcg
960
aatggccgcg cccctcctgg ccctctgact cggcgattgg ccggccgtgc tcgcactcca
1020
cgacccaaat ggctgttcca gggcgctagt caagcgggcg agttaggaaa acagcgaaga
1080
atgccgggac tagtgaagcg ggtaagggac gtgc
1114

<210> 4460
<211> 121
<212> PRT
<213> Homo sapiens

<400> 4460
Trp Arg Cys Pro Arg Arg Arg Ala Arg Gly Asn Pro Gly Pro Gly Arg
 1   5   10   15
Ala Pro Pro Ser Arg Ala Ala Arg Arg Ala Arg Ala Leu Ser Pro Ser
             20   25   30
Gly Lys Glu Arg Ala Ala Pro Ser Gln Gly Ser Pro Arg Cys Cys Pro
         35   40   45
Leu Ser Pro Gly Ser Ala Arg Gly Ala Arg Gly Glu Asn Gln Pro Arg
     50   55   60
Ser Arg Gly Arg Ala Ala Asn Gly Arg Ala Pro Pro Gly Pro Leu Thr
65   70   75   80
Arg Arg Leu Ala Gly Arg Ala Arg Thr Pro Arg Pro Lys Trp Leu Phe
                 85   90   95
Gln Gly Ala Ser Gln Ala Gly Glu Leu Gly Lys Gln Arg Arg Met Pro
             100   105   110
Gly Leu Val Lys Arg Val Arg Asp Val
             115   120

<210> 4461
<211> 488
<212> DNA
<213> Homo sapiens

<400> 4461
acagagtcct acaccagcac tgcaatggcc cccaagggca tcttctgtaa cccgtacaac
60
aatctgatct tcatctgggg caacttcctc ctgcagagct ctaacaagga aaacttcatc
120

3646

tacctggcag acttccccaa ggaactgtcc atcaaataca tggccagatc gttccgtggg
180
gctgtggcta ttgtcacaga gacggaggag gtgggctgcc ccgcccttct ccccattccc
240
tctctgccca cccccaaacc ccaggggccc ctctttcccc cgtcacagta aaggagccaa
300
gggaagggg caccctcggg gaccctgaga aagggcagtg aagctccatt tataactgaa
360
actcctggaa ctcagggtaa gtgtcagctc caaagtcacg cagaccggag ctatgatccg
420
atgttcagag gcggccctct ttcatcccac agtgtggtcg ttcacttcat aaatattgag
480
catttaaa
488

<210> 4462
<211> 96
<212> PRT
<213> Homo sapiens

<400> 4462
Thr Glu Ser Tyr Thr Ser Thr Ala Met Ala Pro Lys Gly Ile Phe Cys
 1   5   10   15
Asn Pro Tyr Asn Asn Leu Ile Phe Ile Trp Gly Asn Phe Leu Leu Gln
             20   25   30
Ser Ser Asn Lys Glu Asn Phe Ile Tyr Leu Ala Asp Phe Pro Lys Glu
         35   40   45
Leu Ser Ile Lys Tyr Met Ala Arg Ser Phe Arg Gly Ala Val Ala Ile
     50   55   60
Val Thr Glu Thr Glu Glu Val Gly Cys Pro Ala Leu Leu Pro Ile Pro
65   70   75   80
Ser Leu Pro Thr Pro Lys Pro Gln Gly Pro Leu Phe Pro Pro Ser Gln
                 85   90   95

<210> 4463
<211> 2662
<212> DNA
<213> Homo sapiens

<400> 4463
nnccacctcc ctctcatggc tagtaggaga gactggtgct tgccccgccc ggtggactaa
60
ctcgcttaat tttaaataaa aagtcgagga cacggcggtc gttttcccga agacatgggc
120
cctcccatgg gccatttgct ccctggaggc cctcgcgtct tgctgagccc ggggagttag
180
gatgacgcga gcggtgaggg aacccggaac aattccttca cagaacaatt gaggcgaggc
240
ctttgggagt actttgtggg acggaccctg gcgggccctg ccagacgcac agggatggcg
300
gcggaggcgg ccgatttggg gctggggggcc gccgtccccg tggagctgag gcgggagcga
360
cgcatggtgt gcgtggagta cccgggagtg gtgcgtgatg tggctaagat gctgccgact
420

ctgggcggtg aggaaggcgt ctcccggatc tacgcagacc ccaccaagag gctggagctg
480
tacttccggc ccaaggaccc atactgccac ccagtgtgcg ccaaccgctt cagtaccagc
540
agcctgctgc tccgcatcag gaagagaacg aggcggcaga aagggdtgct gggcactgag
600
gcccactccg aggtcacatt tgacatggag atccttggca tcatctccac catttacaaa
660
tttcagggga tgtctgactt ccagtacttg gctgtgcata cggaagcagg cggcaagcat
720
acgtcaatgt atgacaaggt gctcatgctc cggcccgaga aggaggcctt tttccaccag
780
gagctgccgc tctacatccc cccacccatc ttctcccggc tggacgcccc ggtggactac
840
ttctaccgac cagagaccca gcaccgggaa ggctacaaca tcccccccat ctcaggtgag
900
aatctgattg gcctgagcag agcccggcgc ccccacaatg ccatctttgt caactttgag
960
gatgaggagg tgcccaagca gccactggag gctgcagccc agacgtggag gagagtctgc
1020
actaaccccg tggaccggaa ggtggaggag gagctgagga agctgtttga catccgtccc
1080
atctggtccc gaaatgctgt caaggccaac atcagcgtcc acccagacaa gctcaaggtc
1140
ttgcttccct tcatagccta ttacatgata acaggcccct ggcgcagcct atggattcga
1200
tttgggtatg accccccgaaa aaacccagat gccaagattt atcaagtcct cgatttccga
1260
atccgttgtg gaatgaaaca cggttacgcc cccagtgact tgccggtcaa agcaaagcgc
1320
agcacctaca actacagcct ccccatcacc gtcaagaaga catccagcca gcttgtcacc
1380
atgcatgacc tgaagcaggg cctgggccgg tcggggacga gtggtgctcg gaaaccagct
1440
tccagcaagt acaagctcaa ggactctgtc tacatcttcc gggaaggggc cttgccaccc
1500
tatcggcaga tgttctacca gttatgcgac ttgaatgtgg aagagttgca gaagatcatt
1560
caccgcaatg acggggcaga gaattcctgc acagaacggg atgggtggtg cctccccaag
1620
accagcgacg agctcaggga caccatgtcc ctcatgatcc ggcagaccat ccgctccaag
1680
aggcctgctc tcttttccag ctcagccaag gctgatggcg aaaagagca gctgacgtac
1740
gagtctgggg aagacgagga ggatgaggag gaggaggaag aggaggagga ggacttcaag
1800
ccatccgacg gcagtgaaaa cgaaatggag acagagattc tggactacgt gtgacagggc
1860
ccaaggctgg gcctccctga cccggccaga ctggtgtctg gcctaatgag ggagccgggg
1920
ctccccattg ccacccacag tgcccggaat ggccctagga ggccctctga ggagagctag
1980
agtcccagca aagggtgcag ctgaccctag cactggctgt gacatgctgc ttggtgctgc
2040

3648

ctctggtcct gaggggttag ggacatcccc aaagggtata ccctggctct gccacccatg
2100
aaccagccca gcatccagcc agtgagtggg cacccaatgc ctctcaggat gagaccagta
2160
aatgccggag gtggagctgg gcagctgtgg agccccaggc cacaggccag tctcgcttgg
2220
ctctcatgac tgtggtggtg gagatagcgt ggggagcctc gcccatggtc tcacgtggca
2280
agaagtgcct ttagctctgg atcccaaccg tttggcacag ctttggccac agccaggccc
2340
ctctggaatt gtccttatta aaccagtttc ccgagaagtc ttggtttctt ggtgtgaatg
2400
ttggcgctgc aggggagtct tcttattgcc ttggggcttg gccccctttt gtcccttcat
2460
atattccttc attcattcct tcattcattc agtgacatgc tggcagtgct ggcctgtgcc
2520
cccctcacat gtggtcgggt tgggtgaggg cagctaggaa gactccaggg gctgggtcag
2580
ttcttctcta aatgaatacc cttctgacga agtcatggga gacggggcct gctgtcctgt
2640
gggctgccag tgtgaaacta gt
2662

<210> 4464
<211> 519
<212> PRT
<213> Homo sapiens

<400> 4464
Met Ala Ala Glu Ala Ala Asp Leu Gly Leu Gly Ala Ala Val Pro Val
1   5   10   15
Glu Leu Arg Arg Glu Arg Arg Met Val Cys Val Glu Tyr Pro Gly Val
            20   25   30
Val Arg Asp Val Ala Lys Met Leu Pro Thr Leu Gly Gly Glu Glu Gly
        35   40   45
Val Ser Arg Ile Tyr Ala Asp Pro Thr Lys Arg Leu Glu Leu Tyr Phe
    50   55   60
Arg Pro Lys Asp Pro Tyr Cys His Pro Val Cys Ala Asn Arg Phe Ser
65   70   75   80
Thr Ser Ser Leu Leu Leu Arg Ile Arg Lys Arg Thr Arg Arg Gln Lys
                85   90   95
Gly Val Leu Gly Thr Glu Ala His Ser Glu Val Thr Phe Asp Met Glu
            100   105   110
Ile Leu Gly Ile Ile Ser Thr Ile Tyr Lys Phe Gln Gly Met Ser Asp
        115   120   125
Phe Gln Tyr Leu Ala Val His Thr Glu Ala Gly Gly Lys His Thr Ser
    130   135   140
Met Tyr Asp Lys Val Leu Met Leu Arg Pro Glu Lys Glu Ala Phe Phe
145   150   155   160
His Gln Glu Leu Pro Leu Tyr Ile Pro Pro Ile Phe Ser Arg Leu
                165   170   175
Asp Ala Pro Val Asp Tyr Phe Tyr Arg Pro Glu Thr Gln His Arg Glu
            180   185   190
Gly Tyr Asn Asn Pro Pro Ile Ser Gly Glu Asn Leu Ile Gly Leu Ser

3649

```
          195                    200                   205
Arg Ala Arg Arg Pro His Asn Ala Ile Phe Val Asn Phe Glu Asp Glu
          210                215                   220
Glu Val Pro Lys Gln Pro Leu Glu Ala Ala Ala Gln Thr Trp Arg Arg
225                    230                   235                   240
Val Cys Thr Asn Pro Val Asp Arg Lys Val Glu Glu Glu Leu Arg Lys
                   245                250                   255
Leu Phe Asp Ile Arg Pro Ile Trp Ser Arg Asn Ala Val Lys Ala Asn
               260                265                   270
Ile Ser Val His Pro Asp Lys Leu Lys Val Leu Leu Pro Phe Ile Ala
           275                280                   285
Tyr Tyr Met Ile Thr Gly Pro Trp Arg Ser Leu Trp Ile Arg Phe Gly
       290                    295                   300
Tyr Asp Pro Arg Lys Asn Pro Asp Ala Lys Ile Tyr Gln Val Leu Asp
305                    310                   315                   320
Phe Arg Ile Arg Cys Gly Met Lys His Gly Tyr Ala Pro Ser Asp Leu
                   325                330                   335
Pro Val Lys Ala Lys Arg Ser Thr Tyr Asn Tyr Ser Leu Pro Ile Thr
               340                345                   350
Val Lys Lys Thr Ser Ser Gln Leu Val Thr Met His Asp Leu Lys Gln
           355                360                   365
Gly Leu Gly Arg Ser Gly Thr Ser Gly Ala Arg Lys Pro Ala Ser Ser
       370                    375                   380
Lys Tyr Lys Leu Lys Asp Ser Val Tyr Ile Phe Arg Glu Gly Ala Leu
385                    390                   395                   400
Pro Pro Tyr Arg Gln Met Phe Tyr Gln Leu Cys Asp Leu Asn Val Glu
                   405                410                   415
Glu Leu Gln Lys Ile Ile His Arg Asn Asp Gly Ala Glu Asn Ser Cys
               420                425                   430
Thr Glu Arg Asp Gly Trp Cys Leu Pro Lys Thr Ser Asp Glu Leu Arg
           435                440                   445
Asp Thr Met Ser Leu Met Ile Arg Gln Thr Ile Arg Ser Lys Arg Pro
       450                    455                   460
Ala Leu Phe Ser Ser Ser Ala Lys Ala Asp Gly Gly Lys Glu Gln Leu
465                    470                   475                   480
Thr Tyr Glu Ser Gly Glu Asp Glu Glu Asp Glu Glu Glu Glu Glu Glu
                   485                490                   495
Glu Glu Glu Asp Phe Lys Pro Ser Asp Gly Ser Glu Asn Glu Met Glu
               500                505                   510
Thr Glu Ile Leu Asp Tyr Val
           515
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<210> 4465
<211> 1291
<212> DNA
<213> Homo sapiens

<400> 4465
gggctggagc gccaggttcg ggccgagatc gagcacaaga aggaggagct gcggcagatg
60
gtgggcgaac ggtaccgcga cctgatcgag gcgnccgaca ccatcggcca gatgcgccgt
120
ngcgccgtgg ggctagtgga cgccgtgaag gccaccgacc agtactgcgc ccgcctccgc
180

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caggccggct cggccgcgcc ccggccaccg cgggcccagc agccacagca gccatcccaa
240
gagaagttct acagcatggc tgccagatca agctactctt agaaattccg gagaagatct
300
ggagctcgat ggaagcctct cagtgtctcc acgccacacn agctctacct gctctgctgc
360
cacctccaca gcctgctcca gctggattct tctagttccc gatacagtcc cgtcctctcc
420
cggtttccta tactcatccg gcaggtggcg ccgccagcc acttccggtc aactattctg
480
catgaaagca agatgttgct caaatgccaa ggtgtgtctg accaagctgt ggccgaggcc
540
ctgtgctcta taatgctctt agaagagagt tctcctcgcc aagccctcac agacttcctg
600
ctggccagaa aggcaactat tcagaaactt ctcaaccagc acaccatgg tgctggtatc
660
aaggctcaga tttgctcatt agtggagttg ctggccacca ctctgaagca agctcatgcc
720
cttttctaca ctttgccaga aggactgctg ccagatccag ccctgccatg tggcttgctc
780
ttctctactc tggagaccat cacaggccag catcctgccg gaaagggcac tggtgtcctg
840
caggaagaga tgaaactctg cagctggttt aaacacctgc cagcatccat cgtcgagttc
900
cagccaacac tccgaaccct tgcacatccc atcagtcagg aatacctgaa agacacgctg
960
cagaaatgga tccacatgtg taatgaagac attaaaaatg ggatcaccaa cctgctcatg
1020
tacgtgaaga gcatgaaggg tctcgcggga atccgggacg ccatgtggga gttacttacc
1080
agtgagtcca ccaatcacag ctgggatgtg ctatgtaccc gcnttctgga gaagccgctc
1140
ttgttctggg aagatatgat gcagcaactg ttccttgacc gattacagac tctgacaaaa
1200
gaaggctttg actccatctc cagtagtncc aaggagctct ggtttcang tttgcaggaa
1260
cttgaaagca gcaccagcaa ctcccacttc a
1291
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<210> 4466
<211> 93
<212> PRT
<213> Homo sapiens
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<400> 4466
Gly Leu Glu Arg Gln Val Arg Ala Glu Ile Glu His Lys Lys Glu Glu
1               5                   10                  15
Leu Arg Gln Met Val Gly Glu Arg Tyr Arg Asp Leu Ile Glu Ala Xaa
            20                  25                  30
Asp Thr Ile Gly Gln Met Arg Arg Xaa Ala Val Gly Leu Val Asp Ala
        35                  40                  45
Val Lys Ala Thr Asp Gln Tyr Cys Ala Arg Leu Arg Gln Ala Gly Ser
    50                  55                  60
Ala Ala Pro Arg Pro Pro Arg Ala Gln Gln Pro Gln Gln Pro Ser Gln
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```
65                    70              75                    80
Glu Lys Phe Tyr Ser Met Ala Ala Arg Ser Ser Tyr Ser
                    85              90
```

<210> 4467
<211> 1142
<212> DNA
<213> Homo sapiens

<400> 4467
nnagatgtcc ctaaggtaga ggtgttggaa cgggagctgg cctggctgaa ggagcatctg
60
tcccagctgg agtcccctgt ggtgttttgt cacaatgacc tgctctgcaa gaatatcatc
120
tatgacagca tcaaaggtca cgtgcggttc attgactatg aatatgctgg ctacaactac
180
caagcttttg acattggcaa ccatttcaat gagtttgcag gcgtgaatga ggtggattac
240
tgcctgtacc cggcgcggga cacccagctg cagtggctgc actactacct gcaggcacaa
300
aaggggatgg ccgtgacccc cagggaggtg caaaggctct acgtgcaagt caacaagttt
360
gccctggcgt ctcacttctt ctgggctctc tgggccctca tccagaacca gtactccacc
420
atcgactttg atttcctcag gtacgcagtg atccgattca accagtactt caaggtgaag
480
cctcaagcgt cagccttgga gatgccaaag tgaccagcca ccccatccct cccctaccca
540
tctgtctggc cagacctgtt ctccagagct caattctgca ctctgggatc cacacccttg
600
gacagggtgg gagaggggac acatgggtgt ccagggagaa ggctctgtcc ctgccgccag
660
accccagtgg ttgccactga agacctcatt ctcctgtctg gaggggctga taggaccccc
720
ttccgggggt cccctcacc ccaccaggct tgggaggaag tgcctgcagc caggtcctga
780
accataacca ccctgggaa acacatcatt cccagcctca ggccctgctg gaattggggc
840
tgccttatat gtgtgtttac cccttcctgg cctggggaag gaggcgggga gggctccttt
900
ctacctccag tgccctgagc ctccagtccg tctccccctg catgccccat gtgggaggtg
960
ctgagctcca aaccagcatc acaccaactc tgacacatgg atgtacctat cttggtgatg
1020
ggtgggggcc aagaattgag catgacatct tccccagcag ccacctcctc tgagatccct
1080
caccttctcc aaaccagatc caatcaaacc tcagcccgag gaaacatgct cccctcacgc
1140
gt
1142

    <210> 4468
    <211> 170
    <212> PRT

<213> Homo sapiens

<400> 4468
Xaa Asp Val Pro Lys Val Glu Val Leu Glu Arg Glu Leu Ala Trp Leu
1   5   10   15
Lys Glu His Leu Ser Gln Leu Glu Ser Pro Val Val Phe Cys His Asn
            20   25   30
Asp Leu Leu Cys Lys Asn Ile Ile Tyr Asp Ser Ile Lys Gly His Val
            35   40   45
Arg Phe Ile Asp Tyr Glu Tyr Ala Gly Tyr Asn Tyr Gln Ala Phe Asp
    50   55   60
Ile Gly Asn His Phe Asn Glu Phe Ala Gly Val Asn Glu Val Asp Tyr
65   70   75   80
Cys Leu Tyr Pro Ala Arg Glu Thr Gln Leu Gln Trp Leu His Tyr Tyr
            85   90   95
Leu Gln Ala Gln Lys Gly Met Ala Val Thr Pro Arg Glu Val Gln Arg
            100   105   110
Leu Tyr Val Gln Val Asn Lys Phe Ala Leu Ala Ser His Phe Phe Trp
    115   120   125
Ala Leu Trp Ala Leu Ile Gln Asn Gln Tyr Ser Thr Ile Asp Phe Asp
    130   135   140
Phe Leu Arg Tyr Ala Val Ile Arg Phe Asn Gln Tyr Phe Lys Val Lys
145   150   155   160
Pro Gln Ala Ser Ala Leu Glu Met Pro Lys
            165   170

<210> 4469
<211> 409
<212> DNA
<213> Homo sapiens

<400> 4469
atctatgatg cacaacatgc caatttggct ggcacgctga gcggccatgc ctcctgggtg
60
ctgaacgttg cattctgtcc tgatgacact cactttgttt ccagatccca gtgttggtca
120
ggcctgggat ggccaagaca gttggaaagc aggagatgga caacttgaag gcattgcaca
180
gtgctttaga ggcctcctgc gagccttggt tttgaagctt taacaggcct ccctcccatc
240
tggaaatagg tagctgtgtc tgagactcct ggagaacaat taatatgagg gccaggcaga
300
tcacaatttc aggaaaatgg ctaccctgtg aggagagaaa gccacccaat gatgctgata
360
cctggccatt tcctgtaccg aggcatggng ttggggggtc tgaagttag
409

<210> 4470
<211> 55
<212> PRT
<213> Homo sapiens

<400> 4470
Ile Tyr Asp Ala Gln His Ala Asn Leu Ala Gly Thr Leu Ser Gly His

3653

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        1                5              10                15
Ala Ser Trp Val Leu Asn Val Ala Phe Cys Pro Asp Asp Thr His Phe
                20                    25              30
Val Ser Arg Ser Gln Cys Trp Ser Gly Leu Gly Trp Pro Arg Gln Leu
        35                    40                    45
Glu Ser Arg Arg Trp Thr Thr
        50                    55
```

<210> 4471
<211> 1771
<212> DNA
<213> Homo sapiens

<400> 4471

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ctgggcccca atcaccacgc tgtgctcccc acacccgcaa ggctccccct cctcagcctt
60
agtttcctct tctggaaatt ggggaatctt catgtcacct tcttgacagc atttgccagg
120
catccagcag gcgcttaata aatggccaag tcattgtttg ggtttctaaa taaggctctc
180
ctaatggccg ggtctggcca cggtcccagt gtccctgggc agccctccga ggggccggca
240
cagggcgcac tataaatgag cggctgcgca cgcaggggca ctgcaacgcg gaggagcagg
300
atggagatcc ctgtgcctgt gcagccgtct tggctgcgcc gcgcctcggc cccgttgccc
360
ggactttcgg cgcccggacg cctctttgac cagcgcttcg gcgaggggct gctggaggcc
420
gagctggctg cgctctgccc caccacgctc gcccctact acctgcgcgc acccagcgtg
480
gcgctgcccg tcgcccaggt gccgacggac cccggccact tttcggtgct gctagacgtg
540
aagcacttct cgccggagga aattgctgtc aaggtggtgg cgaacacgt ggaggtgcac
600
gcgcgccacg aggagcgccc ggatgagcac ggattcgtcg cgcgcgagtt ccaccgtcgc
660
taccgcctgc cgcctggcgt ggatccggct gccgtgacgt ccgcgctgtc ccccgagggc
720
gtcctgtcca tccaggccgc accagcgtcg gcccaggccc caccgccagc cgcagccaag
780
taggaggggg ctgggccgcg cccgcacccc gggagcctcc tcaggctccc tctattaaag
840
ccgatctgac tccgcccagc cagatgtccc gagtgcgcca aggactgtcc tctcacccac
900
tcctggattc tgccctgacc tccatcctgg acactgcctt gataacatag acccttccac
960
tgacaccctc gctctcacac ccctccagc tttccgaccc cacaccgaca actccccggc
1020
ttccagaccc taccagcact accctaaccc tcagccgaca gtctcagccc caccgaccca
1080
ctttcttggc atatagcccc acttaagacc cctcctctac ttccttctga gtcctctaca
1140
aagacatccg ggtactacat ttccatccct tccctatttt gacaccaaat tatggtgtag
1200
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acagccctcc cccaacccca ggccagtcag gcacaatccc cccacccccc aaacgtcctg
1260
gactgcacag acctcccact ccagaccatc caggcctggt tcccaagacc cgatccttcc
1320
cctgcaacca gacagtctac aactgccccc tccagcccat tttctgccgt gaaaccccag
1380
ccagccacac cagactctgg aacccttttt cgactgcccc aactcttgga caccaggcca
1440
actagaacac ccaacaccaa actgtacaga ctctcccacc ccaacctccc cagactctgc
1500
acggatgtcc taggcccccct ccccaactct aaccagaccc catcccccta agtccctttg
1560
tcttgacccc caagtcttca accagatatc ctcggcaacc cacctcccac cctcctcctc
1620
ttctccttca agacccaact gagcacccgc tctgattccc cacagccttt ctccctgcca
1680
ccactccctt agtctttccc aggcttactc tcccaataaa tgtgctagag ctctgccaaa
1740
aaaagaaaaa aaagtcgacg cggccggaat t
1771

<210> 4472
<211> 160
<212> PRT
<213> Homo sapiens

<400> 4472

Met	Glu	Ile	Pro	Val	Pro	Val	Gln	Pro	Ser	Trp	Leu	Arg	Arg	Ala	Ser
1				5					10				15		
Ala	Pro	Leu	Pro	Gly	Leu	Ser	Ala	Pro	Gly	Arg	Leu	Phe	Asp	Gln	Arg
			20				25				30				
Phe	Gly	Glu	Gly	Leu	Leu	Glu	Ala	Glu	Leu	Ala	Ala	Leu	Cys	Pro	Thr
		35				40				45					
Thr	Leu	Ala	Pro	Tyr	Tyr	Leu	Arg	Ala	Pro	Ser	Val	Ala	Leu	Pro	Val
	50				55				60						
Ala	Gln	Val	Pro	Thr	Asp	Pro	Gly	His	Phe	Ser	Val	Leu	Leu	Asp	Val
65				70				75						80	
Lys	His	Phe	Ser	Pro	Glu	Glu	Ile	Ala	Val	Lys	Val	Val	Gly	Glu	His
				85				90				95			
Val	Glu	Val	His	Ala	Arg	His	Glu	Glu	Arg	Pro	Asp	Glu	His	Gly	Phe
			100				105				110				
Val	Ala	Arg	Glu	Phe	His	Arg	Arg	Tyr	Arg	Leu	Pro	Pro	Gly	Val	Asp
		115				120				125					
Pro	Ala	Ala	Val	Thr	Ser	Ala	Leu	Ser	Pro	Glu	Gly	Val	Leu	Ser	Ile
	130				135				140						
Gln	Ala	Ala	Pro	Ala	Ser	Ala	Gln	Ala	Pro	Pro	Pro	Ala	Ala	Ala	Lys
145				150				155						160	

<210> 4473
<211> 1255
<212> DNA
<213> Homo sapiens

<400> 4473

gccggcgcga tgccccgccc cttcgatagc tcatctttgc gcgccgcagt cgcgcggagc
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ccggcttccg acgtgcagcc tggcagtgca gtgagctgtc tggccttttg tccttgatcc
120
ttggttaagg aaatgaccaa ccagtacggt attctcttca acaagagca agcccatgat
180
gatgccattt ggtcagttgc ttgggggaca aacaagaagg aaaactctga gacagtggtc
240
acaggctccc tagatgacct ggtgaaggtc tggaaatggc gtgatgagag ctggaccta
300
cagtggagtc tggagggaca tcagctggga gtggtgtctg tggacatcag ccacacctt
360
cccattgctg cctccagttc tctagatgct catattcgac tctgggactt ggaaaatggc
420
aaacagatga agtctataga tgcaggaccg gtggatgcct ggactttggc attctctccg
480
gactcccagc atctggcaac aggaactcac atggggaaag tgaacatttt tggtgtggaa
540
agtggaaaaa aagaatactc tttggacact agaggaaaat tcatccttag tattgcatat
600
agtcctgatg gaaaatacct ggccagcgga gccatagatg gaatcatcaa tattttgat
660
attgcaactg gaaaacttct gcataccctg gaaggccatg ccatgcccat tcgctccttg
720
accttttccc cggactccca gctccttgtc actgcttcag atgatggcta catcaagatc
780
tatgatgtac aacatgccaa tttggctggc acgctgagcg gccatgcctc ctgggtgctg
840
aacgttgcat tctgtcctga tgacactcac tttgtttcca gttcgtctga caaaagtgta
900
aaagtttggg atgttggaac gaggacttgt gttcacacct tctttgatca ccaggatcag
960
gtctggggag taaaatacaa tggaaatggt tcaaaaattg tgtctgttgg agatgaccag
1020
gaaattcaca tctatgattg tccaatttaa acatcaaagt ctccaggctt atgctgcaaa
1080
gagaatgtac ggattgatca tgacattcct taccttctta ggcttgttta aaagaaatat
1140
agcatttatt gtagcaaaga cttaaatttt gtagatacaa tatgaatctt ttcatgtttt
1200
attggaaatg ctgttcatac tttaacataa agctttctta atgcaaaaaa aaaaa
1255

<210> 4474
<211> 305
<212> PRT
<213> Homo sapiens

<400> 4474
Met Thr Asn Gln Tyr Gly Ile Leu Phe Lys Gln Glu Gln Ala His Asp
1   5   10   15
Asp Ala Ile Trp Ser Val Ala Trp Gly Thr Asn Lys Lys Glu Asn Ser
            20   25   30
Glu Thr Val Val Thr Gly Ser Leu Asp Asp Leu Val Lys Val Trp Lys

3656

```
          35                        40                        45
Trp Arg Asp Glu Arg Leu Asp Leu Gln Trp Ser Leu Glu Gly His Gln
     50                     55                     60
Leu Gly Val Val Ser Val Asp Ile Ser His Thr Leu Pro Ile Ala Ala
65                     70                     75                     80
Ser Ser Ser Leu Asp Ala His Ile Arg Leu Trp Asp Leu Glu Asn Gly
               85                     90                     95
Lys Gln Met Lys Ser Ile Asp Ala Gly Pro Val Asp Ala Trp Thr Leu
           100                    105                    110
Ala Phe Ser Pro Asp Ser Gln His Leu Ala Thr Gly Thr His Met Gly
       115                    120                    125
Lys Val Asn Ile Phe Gly Val Glu Ser Gly Lys Lys Glu Tyr Ser Leu
   130                    135                    140
Asp Thr Arg Gly Lys Phe Ile Leu Ser Ile Ala Tyr Ser Pro Asp Gly
145                    150                    155                    160
Lys Tyr Leu Ala Ser Gly Ala Ile Asp Gly Ile Ile Asn Ile Phe Asp
               165                    170                    175
Ile Ala Thr Gly Lys Leu Leu His Thr Leu Glu Gly His Ala Met Pro
           180                    185                    190
Ile Arg Ser Leu Thr Phe Ser Pro Asp Ser Gln Leu Leu Val Thr Ala
       195                    200                    205
Ser Asp Asp Gly Tyr Ile Lys Ile Tyr Asp Val Gln His Ala Asn Leu
   210                    215                    220
Ala Gly Thr Leu Ser Gly His Ala Ser Trp Val Leu Asn Val Ala Phe
225                    230                    235                    240
Cys Pro Asp Asp Thr His Phe Val Ser Ser Ser Ser Asp Lys Ser Val
               245                    250                    255
Lys Val Trp Asp Val Gly Thr Arg Thr Cys Val His Thr Phe Phe Asp
           260                    265                    270
His Gln Asp Gln Val Trp Gly Val Lys Tyr Asn Gly Asn Gly Ser Lys
       275                    280                    285
Ile Val Ser Val Gly Asp Asp Gln Glu Ile His Ile Tyr Asp Cys Pro
   290                    295                    300
Ile
305
```

```
<210> 4475
<211> 475
<212> DNA
<213> Homo sapiens

<400> 4475
acgcgtgaac ccgtgagctt gggaggggat atcgtccaag cgaggtctct ctgatcccgc
60
tggtgtccag actccttctg gagttccaat cccacccctg gcacactgtc catctctggc
120
tggtctgtcg tgaagctgga gagccgtgca aggcgacaga gccttctgtg tggcccgtcc
180
tggcgctctg gggcaagggc tgacttgagc tgcttcgtct gctcatctgc tgtctgccag
240
ctgccctcag acctcctcct gggtgcagcc cgttcccact tgagagggag gtggtcttca
300
ctttagggg taggcacatc cctgtttgcg ccttgccccg acagcctcgt caatgcccag
360
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ccacttctga gggctggagg gacaggaact tcctttcttc cccctttctg tctcctcgcg
420
tgggtacaaa agcacgtctg tagtccatgt gtgtgaagag aggacgcatt ctaga
475

<210> 4476
<211> 106
<212> PRT
<213> Homo sapiens

<400> 4476
Met Cys Leu Pro Pro Lys Val Lys Thr Thr Ser Leu Ser Ser Gly Asn
 1   5   10   15
Gly Leu His Pro Gly Gly Gly Leu Arg Ala Ala Gly Arg Gln Gln Met
                20   25   30
Ser Arg Arg Ser Ser Ser Ser Gln Pro Leu Pro Gln Ser Ala Arg Thr
            35   40   45
Gly His Thr Glu Gly Ser Val Ala Leu His Gly Ser Pro Ala Ser Arg
        50   55   60
Gln Thr Ser Gln Arg Trp Thr Val Cys Gln Gly Trp Asp Trp Asn Ser
65   70   75   80
Arg Arg Ser Leu Asp Thr Ser Gly Ile Arg Glu Thr Ser Leu Gly Arg
                85   90   95
Tyr Pro Leu Pro Ser Ser Arg Val His Ala
                100   105

<210> 4477
<211> 1153
<212> DNA
<213> Homo sapiens

<400> 4477
ctcttggcct ggcctcctgc agtgccacgc tccgtgtatt tgacaagctg agttggacac
60
tccatgtggt agagtgtcag tttgtcaaat accccaagtg cggcacatgc ttaccagctc
120
taggccaggg cagatgggat atgacgaatg gactgccagc tggatacaag gatgctcacc
180
aagcaccaag ttctcacaag ttattttatg tgactttgca ggaactgagg cattatatct
240
gaggacacca ggggaaaagt gtggcatctc agggaaatac agccctgggc tgtgtctaca
300
cacaccatga gagtgctgat ggggggcgcaa tagtcttgaa aatgtataaa gtgtccagga
360
atggaagtgc tctttgattc attattattt tcttccttca tattcccctc ccagagtctc
420
ctatctagga catcagcatt ctcacacaag cctaatggct tatctgagta agcagggctt
480
agaaattcac tttcttgata ctcagtcttg ccttctaaac actccttgat cttgcctacc
540
tctccccttt tccacatgtc ttttcctgta ggaacacttt ctccatttat tcctgcctat
600
ccaattcttc cctatatttc ctggaccagc taaagtccag tgtttccaga gactttgaa
660

agtcaactta cactttttcc ttcttcattc acaaagctct tcttccctgg gccctggtat
720
gtatgccttt ctctcctact gtctaatagc acctcgtaaa ttgtcaatga acttttctaa
780
ggggtattct tgaattccca actagattgt gagcttctgg aagacaaggc tatgtctttg
840
attgttgtct cccctaccac agcccagtac tttagttaca gaaaataata aatatttact
900
gattgattga ctttcctctt gtccactagc tttaggtttg ggggccaaat tctaccctgg
960
attttgaaaa attcaaactg tgaacaccac aatgttatag agcatatgag gtagtagcca
1020
gcatgaagga tgttttcttc ctgagaaaca gtgtcaaggg ctggaggaag agggcaaaat
1080
agcagactca gagggcaaat aaattttggt attacttggt cacacaaggt tatacaggtg
1140
ttttcttgta gga
1153

<210> 4478
<211> 118
<212> PRT
<213> Homo sapiens

<400> 4478
Met Trp Lys Arg Gly Glu Val Gly Lys Ile Lys Glu Cys Leu Glu Gly
 1   5   10   15
Lys Thr Glu Tyr Gln Glu Ser Glu Phe Leu Ser Pro Ala Tyr Ser Asp
                20   25   30
Lys Pro Leu Gly Leu Cys Glu Asn Ala Asp Val Leu Asp Arg Arg Leu
            35   40   45
Trp Glu Gly Asn Met Lys Glu Glu Asn Asn Asn Glu Ser Lys Ser Thr
        50   55   60
Ser Ile Pro Gly His Phe Ile His Phe Gln Asp Tyr Cys Ala Pro Ile
65   70   75   80
Ser Thr Leu Met Val Cys Val Asp Thr Ala Gln Gly Cys Ile Ser Leu
                85   90   95
Arg Cys His Thr Phe Pro Leu Val Ser Ser Asp Ile Met Pro Gln Phe
            100   105   110
Leu Gln Ser His Ile Lys
            115

<210> 4479
<211> 2158
<212> DNA
<213> Homo sapiens

<400> 4479
nngcggcggc ctgcggcggg ttcggtgggc ccaatcccgg ggcggtgcgg ctgtttcggg
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cgcgggcccc gcttttccgc accctgctcc ggcctcgact acggcgagcc tgagcgcggc
120
ggcggcccac gcgcagcaca gggagagatg agcagcacca gcagtaagag ggctccgacc
180

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acggcaaccc agaggctgaa gcaggactac cttcgcatta agaaagaccc ggtgccttac
240
atctgtgccg agcccctccc ttcgaatatt ctcgagtggc actatgtcgt ccgaggccca
300
gagatgaccc cttatgaagg tggctattac catggaaaac taattttttcc cagagaattt
360
cctttcaaac ctcccagtat ctatatgatc actcccaacg ggaggtttaa gtgcaacacc
420
aggctgtgtc tttctatcac ggatttccac ccggacacgt ggaacccggc ctggtctgtc
480
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540
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660
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720
gacggggaga cgcacctcgt ccagaacggg attcagctgc tcaacgggca tgcgccgggg
780
gccgtcccaa acctcgcagg gctccagcag gccaaccggc accacggact cctgggtggc
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gccctggcga acttgtttgt gatagttggg tttgcagcct ttgcttacac ggtcaagtac
900
gtgctgagga gcatcgcgca ggagtgaggc ccaggcgccg agacccaagg cgccactgag
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1020
ccaccaggct cctaggttta gcttttaaaa acctgaaagg ggaagcaaaa accaaaatgt
1080
gtgactgggc tttggaggag actggagcct cagccctgtc ctggccacgg ccgctggggg
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1200
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1380
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1440
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1560
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1620
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1680
tgcagagcct tttctctgaa ttccttatgt ccggtgggcc agaagcccgt cctcctatgc
1740
tggtggaagg cggaggaccg gagtccctgc agaaggcccc gtgcactcgg gggcctccct
1800
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                                   3660

cacatcccgt gcccctgcg ctggccttca cagtaggtaa tggctccggc ccgggtgttc
1860
gctgtccacg gaacatggca gaggggcacc ccggcccgga aagacgccag agccagcagg
1920
ggctgtttcg ggccgcgtgg ctccccgggt ctcggccgtc tcccctcttc tgcgtctgtt
1980
ccgtgacttc gcctgggtgg gatgtaccgc aggtgcatcg cgtcgaggtg gggcacggcc
2040
gccggcaaga aacccaccct gtccggaggc gggcgtgaga caagcccagc ccgcacgcgc
2100
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2158

<210> 4480
<211> 308
<212> PRT
<213> Homo sapiens

<400> 4480
Xaa Arg Arg Pro Ala Ala Gly Ser Val Gly Pro Ile Pro Gly Arg Cys
 1   5   10   15
Gly Cys Phe Gly Arg Gly Pro Arg Phe Ser Ala Pro Cys Ser Gly Leu
            20   25   30
Asp Tyr Gly Glu Pro Glu Arg Gly Gly Gly Pro Arg Ala Ala Gln Gly
        35   40   45
Glu Met Ser Ser Thr Ser Ser Lys Arg Ala Pro Thr Thr Ala Thr Gln
    50   55   60
Arg Leu Lys Gln Asp Tyr Leu Arg Ile Lys Lys Asp Pro Val Pro Tyr
65   70   75   80
Ile Cys Ala Glu Pro Leu Pro Ser Asn Ile Leu Glu Trp His Tyr Val
                85   90   95
Val Arg Gly Pro Glu Met Thr Pro Tyr Glu Gly Gly Tyr Tyr His Gly
            100   105   110
Lys Leu Ile Phe Pro Arg Glu Phe Pro Phe Lys Pro Pro Ser Ile Tyr
            115   120   125
Met Ile Thr Pro Asn Gly Arg Phe Lys Cys Asn Thr Arg Leu Cys Leu
    130   135   140
Ser Ile Thr Asp Phe His Pro Asp Thr Trp Asn Pro Ala Trp Ser Val
145   150   155   160
Ser Thr Ile Leu Thr Gly Leu Leu Ser Phe Met Val Glu Lys Gly Pro
                165   170   175
Thr Leu Gly Ser Ile Glu Thr Ser Asp Phe Thr Lys Arg Gln Leu Ala
            180   185   190
Val Gln Ser Leu Ala Phe Asn Leu Lys Asp Lys Val Phe Cys Glu Leu
            195   200   205
Phe Pro Glu Val Val Glu Glu Ile Lys Gln Lys Gln Lys Ala Gln Asp
    210   215   220
Glu Leu Ser Ser Arg Pro Gln Thr Leu Pro Leu Pro Asp Val Val Pro
225   230   235   240
Asp Gly Glu Thr His Leu Val Gln Asn Gly Ile Gln Leu Leu Asn Gly
                245   250   255
His Ala Pro Gly Ala Val Pro Asn Leu Ala Gly Leu Gln Gln Ala Asn
            260   265   270
Arg His His Gly Leu Leu Gly Gly Ala Leu Ala Asn Leu Phe Val Ile

```
                 275                    280                    285
Val Gly Phe Ala Ala Phe Ala Tyr Thr Val Lys Tyr Val Leu Arg Ser
         290                    295                    300
Ile Ala Gln Glu
305
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<210> 4481
<211> 320
<212> DNA
<213> Homo sapiens

<400> 4481
ggcacccctg tggggatggg ctgtgcctgg aggctggggg gctgcatctg gacagcctct
60
gggtggggcc tcggaacctc ctgctgtgca gccagaaaac aggactcggc ctgtccaccc
120
acgtggggag gggaccccgg gctgggcttc gtaggggctt caaggacccc tgacttctgg
180
ggtgtgcctg acagcagggg aggccccaga gctggccttg gccatgtcca gtccctaatt
240
gaccttttgtc ccttccttcc cctgcctctc tgtgcgtcgc tggactcgcc acgggagttc
300
tcacgaatgg gcacccaatt
320

<210> 4482
<211> 101
<212> PRT
<213> Homo sapiens

<400> 4482
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Met Gly Cys Ala Trp Arg Leu Gly Gly Cys Ile Trp Thr Ala Ser Gly
  1           5                  10                  15
Trp Gly Leu Gly Thr Ser Cys Cys Ala Ala Arg Lys Gln Asp Ser Ala
           20                  25                  30
Cys Pro Pro Thr Trp Gly Gly Asp Pro Gly Leu Gly Phe Val Gly Ala
           35                  40                  45
Ser Arg Thr Pro Asp Phe Trp Gly Val Pro Asp Ser Arg Gly Gly Pro
           50                  55                  60
Arg Ala Gly Leu Gly His Val Gln Ser Leu Ile Asp Leu Cys Pro Phe
65                  70                  75                  80
Leu Pro Leu Pro Leu Cys Ala Ser Leu Asp Ser Pro Arg Glu Phe Ser
                   85                  90                  95
Arg Met Gly Thr Gln
                  100
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<210> 4483
<211> 1852
<212> DNA
<213> Homo sapiens

<400> 4483
nnggttgcgg cgtgccggga gctgagttat agctgtgact tctgccctgc caggccgcac
60

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acaagctggc tgacccggtt tgtaaaaatg gaatttcaag cagtagtgat ggcagtaggt
120
ggaggatctc ggatgacaga cctaacttcc agcattccca aacctctgct tccagttggg
180
aacaaacctt taatttggta cccattgaac ctgcttgagc gtgttggatt tgaagaagtc
240
attgtggtta caaccaggga tgttcaaaag gctctatgtg cagaattcaa gatgaaaatg
300
aagccagata ttgtgtgtat tcctgatgac gctgacatgg gaactgcaga ttctttgcgc
360
tacatatatc caaaacttaa gacagatgtg ctggtgctga gctgtgatct gataacagac
420
gttgccttac atgaggttgt ggacctgttt agagcttatg atgcatcact tgctatgttg
480
atgagaaaag gccaagatag catagaacct gttcccggtc aaaggggaa aaaaaaagca
540
gtggagcagc gtgacttcat tggagtggac agcacaggaa agaggctgct cttcatggct
600
aatgaagcag acttggatga gagctggtc attaagggat ccatcctaca gaagcatcct
660
agaatacgtt tccacacggg tcttgtggat gcccacctct actgtttgaa aaaatacatc
720
gtggatttcc taatggaaaa tgggtcaata acttctatcc ggagtgaact gattccatat
780
ttagtgagaa aacagtttc ctcagcttcc tcacaacagg acaagaaga aaaagaggag
840
gatctaaaga aaaaggagct gaagtcctta gatatctaca gttttataaa agaagccaat
900
acactgaacc tggctcccta tgatgcctgc tggaatgcct gtcgaggaga caggtgggaa
960
gacttgtcca gatcacaggt gcgctgctat gtccacatca tgaaagaggg gctctgctct
1020
cgagtgagca cactgggact ctacatggaa gcaaacagac aggtgcccaa attgctgtct
1080
gctctctgtc cagaagaacc accagtccat tcgtcagccc agattgtcag caaacacctg
1140
gttggagttg acagcctcat tgggccagag acacagattg gagagaagtc atccattaag
1200
cgctcagtca ttggctcatc ctgtctcata aaagatagag tgactattac caattgcctt
1260
ctcatgaact cagtcactgt ggaggaagga agcaatatcc aaggcagtgt catctgcaac
1320
aatgctgtga tcgagaaggg tgcagacatc aaggactgct tgattggaag tggccagagg
1380
attgaagcca aagctaaacg agtgaatgag gtgatcgtgg ggaatgacca gctcatggag
1440
atctgagttc tgagcaagtc agactccttc cttttggcct ccaaagccac agatgttggc
1500
cggcccacct gtttaactct gtatttattt cccaataaag aagggcttcc aaaggcatgc
1560
tggagacttg tggagcagtc caaagctcca tgtcaggtgg gctccaggtg tacacagtgt
1620
atgttcatgt gtcatgtggt aaagatcatc tggagcaagt gtgtgggaca ggacagatac
1680
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agtggcctaa ctcttgtgtg ccaagatgta tcggtggggc agcagctgtc caatgtaaag
1740
ctcctaggaa ggctactttc tgactggctg acccaacca gtcctgaaag tatccctcac
1800
ctaaaaggac ctgggagtac ttcagtccct tatcctaatc agcctttcta ga
1852

<210> 4484
<211> 452
<212> PRT
<213> Homo sapiens

<400> 4484
Met Glu Phe Gln Ala Val Val Met Ala Val Gly Gly Gly Ser Arg Met
1   5   10   15
Thr Asp Leu Thr Ser Ser Ile Pro Lys Pro Leu Leu Pro Val Gly Asn
            20   25   30
Lys Pro Leu Ile Trp Tyr Pro Leu Asn Leu Leu Glu Arg Val Gly Phe
        35   40   45
Glu Glu Val Ile Val Val Thr Thr Arg Asp Val Gln Lys Ala Leu Cys
    50   55   60
Ala Glu Phe Lys Met Lys Met Lys Pro Asp Ile Val Cys Ile Pro Asp
65   70   75   80
Asp Ala Asp Met Gly Thr Ala Asp Ser Leu Arg Tyr Ile Tyr Pro Lys
                85   90   95
Leu Lys Thr Asp Val Leu Val Leu Ser Cys Asp Leu Ile Thr Asp Val
            100   105   110
Ala Leu His Glu Val Val Asp Leu Phe Arg Ala Tyr Asp Ala Ser Leu
        115   120   125
Ala Met Leu Met Arg Lys Gly Gln Asp Ser Ile Glu Pro Val Pro Gly
    130   135   140
Gln Lys Gly Lys Lys Lys Ala Val Glu Gln Arg Asp Phe Ile Gly Val
145   150   155   160
Asp Ser Thr Gly Lys Arg Leu Leu Phe Met Ala Asn Glu Ala Asp Leu
                165   170   175
Asp Glu Glu Leu Val Ile Lys Gly Ser Ile Leu Gln Lys His Pro Arg
            180   185   190
Ile Arg Phe His Thr Gly Leu Val Asp Ala His Leu Tyr Cys Leu Lys
        195   200   205
Lys Tyr Ile Val Asp Phe Leu Met Glu Asn Gly Ser Ile Thr Ser Ile
    210   215   220
Arg Ser Glu Leu Ile Pro Tyr Leu Val Arg Lys Gln Phe Ser Ser Ala
225   230   235   240
Ser Ser Gln Gln Gly Gln Glu Glu Lys Glu Glu Asp Leu Lys Lys Lys
                245   250   255
Glu Leu Lys Ser Leu Asp Ile Tyr Ser Phe Ile Lys Glu Ala Asn Thr
            260   265   270
Leu Asn Leu Ala Pro Tyr Asp Ala Cys Trp Asn Ala Cys Arg Gly Asp
        275   280   285
Arg Trp Glu Asp Leu Ser Arg Ser Gln Val Arg Cys Tyr Val His Ile
    290   295   300
Met Lys Glu Gly Leu Cys Ser Arg Val Ser Thr Leu Gly Leu Tyr Met
305   310   315   320
Glu Ala Asn Arg Gln Val Pro Lys Leu Leu Ser Ala Leu Cys Pro Glu

```
                      325                  330                    335
Glu Pro Pro Val His Ser Ser Ala Gln Ile Val Ser Lys His Leu Val
                  340                  345                350
Gly Val Asp Ser Leu Ile Gly Pro Glu Thr Gln Ile Gly Glu Lys Ser
              355                  360                365
Ser Ile Lys Arg Ser Val Ile Gly Ser Ser Cys Leu Ile Lys Asp Arg
          370                  375                380
Val Thr Ile Thr Asn Cys Leu Leu Met Asn Ser Val Thr Val Glu Glu
      385                  390                395                400
Gly Ser Asn Ile Gln Gly Ser Val Ile Cys Asn Asn Ala Val Ile Glu
                  405                  410                415
Lys Gly Ala Asp Ile Lys Asp Cys Leu Ile Gly Ser Gly Gln Arg Ile
              420                  425                430
Glu Ala Lys Ala Lys Arg Val Asn Glu Val Ile Val Gly Asn Asp Gln
          435                  440                445
Leu Met Glu Ile
      450


<210> 4485
<211> 513
<212> DNA
<213> Homo sapiens

<400> 4485
ggatccacgt cagcccgaca tcgctgcttt atagccatgt tcacgtgtca tatgcgtctc
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agggtaccca aaatcacagg gccaactcac ggggctccta ccactctagc cagtcatggg
120
gtcaggaata ccccaccctc atccaaaatg tgtactcccc caaccttttg tgttcagacc
180
cacaggcctt atagcgccct gtgcgtgccc cagcatttcc ctgcctagtg gggctccagg
240
cgggcagggt gacctccttc cccaggcagt tccacacctg atcccaaaag tcagttctaa
300
tgaagtggat tcattcaaat actggtggtt ctggttggcc cgggtaagtg agggcacaga
360
gaaaaccccc aaatgtagag tatgtgacac agcacaaagc agtcccatgc caaactgatg
420
cagtggcatt ccaagtttag agttccaccg cttgagacca tccaggattc ttttaccaat
480
tacttgtcct actgtctcct atctatttca tga
513


<210> 4486
<211> 100
<212> PRT
<213> Homo sapiens

<400> 4486
Met Gly Ser Gly Ile Pro His Pro His Pro Lys Cys Val Leu Pro Gln
1               5                  10                  15
Pro Phe Val Phe Arg Pro Thr Gly Leu Ile Ala Pro Cys Ala Cys Pro
              20                  25                  30
Ser Ile Ser Leu Pro Ser Gly Ala Pro Gly Gly Gln Gly Asp Leu Leu
```

```
                35                    40                    45
Pro Gln Ala Val Pro His Leu Ile Pro Lys Val Ser Ser Asn Glu Val
        50                    55                    60
Asp Ser Phe Lys Tyr Trp Trp Phe Trp Leu Ala Arg Val Ser Glu Gly
65                    70                    75                    80
Thr Glu Lys Thr Pro Lys Cys Arg Val Cys Asp Thr Ala Gln Ser Ser
                    85                    90                    95
Pro Met Pro Asn
                100
```

<210> 4487
<211> 387
<212> DNA
<213> Homo sapiens

<400> 4487

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nnacgcgtaa agatactttt tcttttctgg attcccaatt ttaggtggca gtcgcaaccc
60
atactattcg gacagatggc acagaaaccg ctgcgcctct ggcttgtgg agatgttgaa
120
ggaaagtttg atattttatt caatagagtt caagcaattc agaagaaaag tggaaacttt
180
gatctgctgt tgtgtgtagg aaatttcttt ggctccaccc aagatgctga atgggaggag
240
tataagactg gcatcaagaa agctcctatt cagacatatg tgcttggtgc taataaccag
300
gaaacagtaa aatatttcca ggatgctgat ggatgtgaat tagctgaaaa cattacttat
360
ctgggtcgta aaggtatctt cactgga
387
```

<210> 4488
<211> 129
<212> PRT
<213> Homo sapiens

<400> 4488

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Xaa Arg Val Lys Ile Leu Phe Leu Phe Trp Ile Pro Asn Phe Arg Trp
1               5                    10                    15
Gln Ser Gln Pro Ile Leu Phe Gly Gln Met Ala Gln Lys Pro Leu Arg
                20                    25                    30
Leu Leu Ala Cys Gly Asp Val Glu Gly Lys Phe Asp Ile Leu Phe Asn
            35                    40                    45
Arg Val Gln Ala Ile Gln Lys Lys Ser Gly Asn Phe Asp Leu Leu Leu
        50                    55                    60
Cys Val Gly Asn Phe Phe Gly Ser Thr Gln Asp Ala Glu Trp Glu Glu
65                    70                    75                    80
Tyr Lys Thr Gly Ile Lys Lys Ala Pro Ile Gln Thr Tyr Val Leu Gly
                85                    90                    95
Ala Asn Asn Gln Glu Thr Val Lys Tyr Phe Gln Asp Ala Asp Gly Cys
                100                   105                   110
Glu Leu Ala Glu Asn Ile Thr Tyr Leu Gly Arg Lys Gly Ile Phe Thr
        115                   120                   125
Gly
```

<210> 4489
<211> 2390
<212> DNA
<213> Homo sapiens

<400> 4489
ngaattcaga ttgtggggtt gacagaactt cagagtcttg cagttgggcc ccgagttttc
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cagtacggag tcaaagttgt acttcaggct atgtacttgc tgtggaagtt gatgtggagg
120
gagccaggtg cctatatctt tctccagaac cccccaggtc tgcctagcat tgctgtctgc
180
tggttcgtgg gctgcctttg tggaagcaag ctcgtcattg actggcacaa ctatggctac
240
tccatcatgg gtctggtgca tggccccaac catcccctcg ttctgctggc caagtggtac
300
gagaagttct ttgggcgcct gtcccacctg aacctgtgtg ttaccaatgc tatgcgagaa
360
gacctggcgg ataactggca catcagggct gtgaccgtct acgacaagcc cgcatctttc
420
tttaaagaga cacctctgga cctgcagcac cggctcttca tgaagctggg cagcatgcac
480
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540
gagcgggatg ctgggagcgg gctggtgacg cgtctccgtg agcggccagc cctgctggtc
600
agcagcacga gctggacaga ggacgaagac ttctccatcc tgctggcagc tttagaaaag
660
tttgaacaac tgactcttga tggacacaac cttccttctc tcgtctgtgt gataacaggc
720
aaagggcctc tgagggagta ttatagccgc ctcatccacc agaagcactt ccagcacatc
780
caggtctgca ccccctggct ggaggccgag gactaccccc tgcttctagg gtcggcggac
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900
atgttcgggt gctgtttgcc tgtgtgtgct gtgaacttca agtgtttaca tgagctggtg
960
aaacatgaag aaaatggcct ggtctttgag gactcagagg aactggcagc tcagctgcag
1020
atgcttttct caaactttcc tgatcctgcg ggcaagctaa accagttccg gaagaacctg
1080
cgggagtcgc agcagctccg atgggatgag agctgggtgc agactgtgct cccttttggtt
1140
atggacacat aactcctggg ccagaggcta taaaacccca ggacccctgc tgtccttccc
1200
gcagcttctt cttggagtct cagggcaaac cctttcgagc agcacctccc agtggccaga
1260
agctgaaatg acagcagtgg tactgcctgg taaaagaatt ggttctgtga cccgggaagc
1320
tttggttggc cttgatttct tctctggagg cttggaaacg cttcctctct tcttctgttc
1380

ttcacgcccc atgcccctgc tagcgtatta ctgttctgtg acttccctgt gacctctgca
1440
gaactcctca tcctgcgttt ggtctccagg tgtccccttt ctgccgtgtt cctaacattt
1500
tgattcctgt cttgaaaaaa gcacctgctg caccgtaagc ccagggatgt ggcagctgca
1560
gtgggcttgg ctttgtgagg aactgagtgt gtccacgttg ggggaacatc atacttgata
1620
cacacgtttt tatttgcaca aagaaaatgc tattttttgga gccagaattt tcatgtctga
1680
tttatggtga ttttcttaag aaccagaact gctggcagaa aggggggcacc cacacgctta
1740
gatagccgat gtcttattag agggcagttt gtggttcctg atttggaaat taacattctc
1800
caaacattcc agtccaatga aagttttatc cgctttccca tataaaaatt cttcccatga
1860
gagtgatttg attctcacaa tcccgttgga gtcgtgtgtg agtcctacag tgtgaggttc
1920
agcattgcca tctccaagtg ctcttcgtag ggaaacagtt tctggtcatg atgagcttcc
1980
gcttcccata tgatcccagc ccggcctagc tcggtggtga acagctggca cgtctctggg
2040
ttgtggacgg taaaggccac gtagacctca ggagcccgct ggtgctccca gcaggcagcc
2100
agcctccgca ggaccctgac cagcgacacg atggcttctg gcaatacag cacgtcttct
2160
gcaaaatatc ccgcagcagc tcagaatctg atgagtctct taactttgct tctaagctca
2220
gtgtggacgg gggagagaga aatctcaagg gcgcattcac aggaacatta naacacgcaa
2280
tagaatgtgt tggcaaagct ctatgtgatc nctccctggg gacgtggagc cagttggaag
2340
tggaagccac agcggctgaa agcctgacct tcagatgtcg cagggtgcac
2390

<210> 4490
<211> 383
<212> PRT
<213> Homo sapiens

<400> 4490
Xaa Ile Gln Ile Val Gly Leu Thr Glu Leu Gln Ser Leu Ala Val Gly
1   5   10   15
Pro Arg Val Phe Gln Tyr Gly Val Lys Val Val Leu Gln Ala Met Tyr
            20   25   30
Leu Leu Trp Lys Leu Met Trp Arg Glu Pro Gly Ala Tyr Ile Phe Leu
        35   40   45
Gln Asn Pro Pro Gly Leu Pro Ser Ile Ala Val Cys Trp Phe Val Gly
    50   55   60
Cys Leu Cys Gly Ser Lys Leu Val Ile Asp Trp His Asn Tyr Gly Tyr
65   70   75   80
Ser Ile Met Gly Leu Val His Gly Pro Asn His Pro Leu Val Leu Leu
                85   90   95
    Ala Lys Trp Tyr Glu Lys Phe Phe Gly Arg Leu Ser His Leu Asn Leu

```
                    100                     105                     110
Cys Val Thr Asn Ala Met Arg Glu Asp Leu Ala Asp Asn Trp His Ile
            115                     120                     125
Arg Ala Val Thr Val Tyr Asp Lys Pro Ala Ser Phe Phe Lys Glu Thr
        130                     135                     140
Pro Leu Asp Leu Gln His Arg Leu Phe Met Lys Leu Gly Ser Met His
145                     150                     155                     160
Ser Pro Phe Arg Ala Arg Ser Glu Pro Glu Asp Pro Val Thr Glu Arg
                165                     170                     175
Ser Ala Phe Thr Glu Arg Asp Ala Gly Ser Gly Leu Val Thr Arg Leu
            180                     185                     190
Arg Glu Arg Pro Ala Leu Leu Val Ser Ser Thr Ser Trp Thr Glu Asp
        195                     200                     205
Glu Asp Phe Ser Ile Leu Leu Ala Ala Leu Glu Lys Phe Glu Gln Leu
    210                     215                     220
Thr Leu Asp Gly His Asn Leu Pro Ser Leu Val Cys Val Ile Thr Gly
225                     230                     235                     240
Lys Gly Pro Leu Arg Glu Tyr Tyr Ser Arg Leu Ile His Gln Lys His
                245                     250                     255
Phe Gln His Ile Gln Val Cys Thr Pro Trp Leu Glu Ala Glu Asp Tyr
            260                     265                     270
Pro Leu Leu Leu Gly Ser Ala Asp Leu Gly Val Cys Leu His Thr Ser
        275                     280                     285
Ser Ser Gly Leu Asp Leu Pro Met Lys Val Val Asp Met Phe Gly Cys
    290                     295                     300
Cys Leu Pro Val Cys Ala Val Asn Phe Lys Cys Leu His Glu Leu Val
305                     310                     315                     320
Lys His Glu Glu Asn Gly Leu Val Phe Glu Asp Ser Glu Glu Leu Ala
                325                     330                     335
Ala Gln Leu Gln Met Leu Phe Ser Asn Phe Pro Asp Pro Ala Gly Lys
            340                     345                     350
Leu Asn Gln Phe Arg Lys Asn Leu Arg Glu Ser Gln Gln Leu Arg Trp
        355                     360                     365
Asp Glu Ser Trp Val Gln Thr Val Leu Pro Leu Val Met Asp Thr
    370                     375                     380
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<210> 4491
<211> 6712
<212> DNA
<213> Homo sapiens

<400> 4491
ngtttttttt tttttttttt ttaaaagcag taatatcttt tatttaaaaa gttcatctta
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gaagaaaatt caaaagggat acaataaact tttccatatc ccaaaaactt gtgcccaaga
120
caaaagagg gaagaattta agtttagggg tacatatgca ggtttgttac acaggtaaac
180
ttttgtgtca tggggattta ttatacagat tatttcatca cccaggtatt aagcctagta
240
cccattagtt attttttcctg ttcctctccc tcctcccacc ctccacccctt tgataggccc
300
cagtacatgt tgttccgaga gggaaaaatt taaaaaacat atgcagttaa ataaccataa
360
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